AUG 6 1925
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Medicine

CLINICAL MEDICINE

A MONTHLY POSTGRADUATE COURSE

August, 1925 | Vol. 32, No. 8

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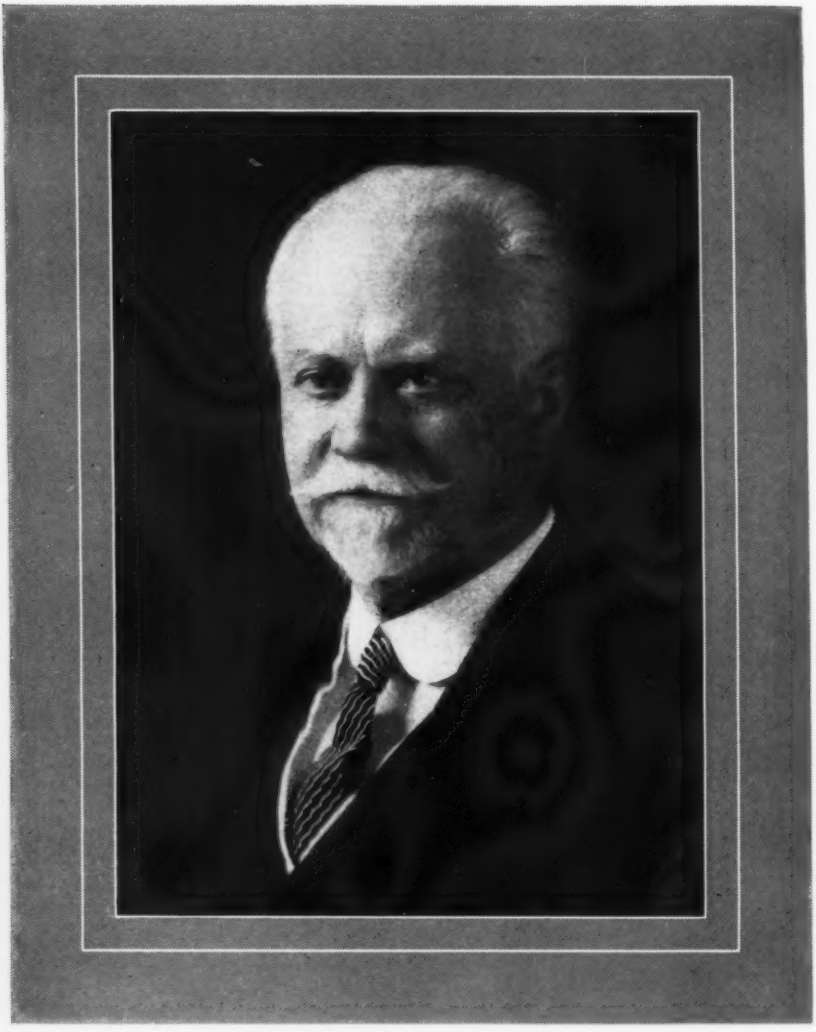

C. E. DeM. SAJOUS, M. D.

Clinical Medicine

A Monthly Postgraduate Course

Vol. 32, No. 8 August, 1925

Dr. Charles E. deM. Sajous

CHARLES Euchariste de Médici (the surname Sajous is that of his stepfather, James Sajous, and was assumed to comply with the inheritance law of California) was born at sea near the coast of France on December 13, 1852, the son of Count Charles Roustan de Médici-Jodoigne and Marie Pierrette Curt.

Young Sajous was educated in France, mainly in private schools and by tutors. Later, he was a student at the University of California and at twenty-five was graduated from Jefferson Medical College, Philadelphia, with the degree of Doctor of Medicine.

He entered medical practice, devoting especial attention to diseases of the nose and throat.

In 1880, he was appointed Professor of Anatomy and of Physiology at Wagner Institue which position he held for two years, and from 1881 to 1888 he was clinical lecturer in laryngology at his Alma Mater. From 1897 to 1898 he was Dean and Professor of laryngology at the Medico-Chirurgical College and from 1909 to 1922 Professor of Therapeutics in the Medical Department of Temple University. He has held the professorship of endocrinology at the University of Pennsylvania since 1921.

In 1884, he married Emma Bergner, of Philadelphia, and their son, Louis T. de M. Sajous, was born in 1886.

In the latter eighties, the medical literature of the world, while sufficiently extensive, was not so incalculably voluminous as at present and, in 1888, Sajous conceived the enormous undertaking of editing "The Annual of the Universal Medical Sciences", which was to be a conspectus of the entire medical literature of the time. Of this monumental work, five volumes appeared annually until 1896 (forty-five volumes in all) during which time over 500,000 volumes were sold. This work came to a close during the panic of 1896, but was resumed under the name of Sajous' "Analytical Cyclopedia of Practical Medicine", which was designed especially for the general practitioner and was so rich in therapeutic hints that their enumeration alone requires a separate volume. Over seventy thousand sets of this work have been sold and, because of its record-making character, its editor, Doctor Sajous, was made an officer of the Academy of France and received the Legion of Honor.

In 1892, feeling that therapeutics was in danger of becoming empirical rather than rational and scientific, he dropped his practice, hospital and teaching positions and went to France where he took up the study of endocrinology under those pioneers and masters of the subject, Claude Bernard and Charles Edouard Brown-Séquard. These studies he indefatigably pursued for ten

years and, in 1893, appeared that tremendous work "The Internal Secretions and the Principles of Medicine" which alone would have been sufficient to make his name famous. This was the first treatise ever published on the internal secretions and still remains the milepost on the road of progress along this path. It marks a new conception of medicine, as a whole, and has run through ten editions.

As if these great works were not enough to establish his position, it may be cited that, during his early career, he earned a considerable reputation by devising several instruments which were widely used in the rhinological practice of the time and has also made very numerous contributions to the periodical medical literature.

Doctor Sajous has been recipient of decorations from many foreign countries and in his own country he was elected Vice-President of the American Laryngological Society in 1888; Fellow of the American Philosophical Society in 1895; President of the American Medical Editors' Association in 1903; President of the American Association for the Study of the Internal Secretions in 1917; and president of the American Therapeutic Society in 1919. The degree of LL. D. was conferred upon him by St. Joseph College, Philadelphia, in 1909, and that of Sc. D., by Temple University, in 1915.

The doctor has sometimes been misunderstood regarding his position as to the relationship between physiologists and clinical investigators and, in a recent personal communication, he has set forth his attitude very clearly.

"I do not consider that physiologists have been useless in their development of the subject (endocrinology), but merely that by using physiology as their *sole* source of light their excellent labors have remained sterile.—When, however, their work is ***added*** to that of investigators in all other lines of research, including clinical medicine, the great value of their labor appears—for our clinical field is far richer in physiological facts than is the experimental animal."

Doctor Sajous' exceptionally wide and ripe experience renders him peculiarly fitted to survey the whole field of the healing art and to set forth authoritative and philosophical opinions upon the progress being made in various lines of medical science, and this, together with his urbane and charming personality, makes him a welcome participant in any gathering of physicians, whether for scientific or for social purposes.

Eternal, natural laws compel man to be good, and fools to be punished until they become good.—A. B. Jamison.

ACONITE

Aconite is prepared from the root of a plant known as *aconitum napellus*, or monkshood, which grows wild in various European countries and is sometimes cultivated here as a garden plant, because of the beautiful spike of blue flowers which it bears.

The root looks much like that of horseradish, and fatal mistakes have been made. It can be distinguished by the fact that it is browner than horseradish and has not the pungent, strangling odor of that popular condiment when cut or scraped.

This drug has two distinct physiological actions; the one local and the other general. The local effect is first as an irritant to the peripheral nerve endings, which are later paralyzed, producing local anesthesia. It is used so little for local effect in this country, and the general effect is so much more important, that the former need not be given much consideration, except that we should remember it when administering the drug and give it well diluted, so as to avoid the tingling and numbness in the mouth and throat which it produces, if given in strong solutions.

In large doses aconite depresses the functional activity of the perceptive centers in the brain and the sensory portion of the spinal cord, but in ordinary therapeutics its effect is almost solely upon the circulatory system, though, if the respiration is hurried, it produces a quieting effect upon that function, and it usually increases the urinary flow.

The circulatory effect consists of a slowing of the heart beat, due to stimulation of the vagus and sedation of the heart muscle, and a fall in the blood pressure, due to relaxation of the peripheral capillaries and a decrease in cardiac force.

The capillary relaxation causes increased heat radiation and a distinct fall of temperature. This effect is sometimes spoken of as "bleeding a patient into his own capillaries".

In poisonous doses there is extreme depression of the circulation and respiration,

with tingling and numbness of the lips, tongue and fingertips and, sometimes, over the whole body, and a subnormal temperature. Death occurs from cardiac failure, the heart stopping in diastole.

If one is unfortunately poisoned by this drug, the treatment is that of shock; warmth; protection of the body; perfect quiet (in the Trendelenburg position so as to keep sufficient blood in the brain), because any sudden or violent movement may cause the heart to fail.

Ether may be given hypodermically and aromatic spirit of ammonia by mouth. Full doses of digitalis, which is the physiological antagonist, should be given, but this drug acts slowly. Full hypodermic doses of strychnine $^1/_{30}$ to $^1/_{10}$ grain) or atropine may be used and sometimes help.

The preparations most generally used are: the *tincture* (which is *now* of 10 percent strength, instead of 35 percent, as it was prior to 1910), of which 2 to 4 drops may be given, well diluted, every 15 minutes, until the desired effect is produced, or if the case requires active treatment, a full dose of 5 to 20 minims (0.2 to 1.3 Cc.) may be used; and the chief active principle, *aconitine*, which was discovered in 1833 by Geiger and Hesse, or one of its salts.

The various preparations of aconitine are said to vary considerably in potency, and both Hare and Wood consider them dangerous for general use; but when one considers the loss (or gain) in strength and the various other changes which may take place in a liquid preparation standing on the druggist's shelf, it certainly seems that, if one can find a preparation of aconitine (such, for instance, as the crystalline hydrobromide) which seems to be uniform and certain in its results, he will do better with that than with the tincture.

The therapeutic use of aconite is exactly indicated by its physiological effects, i. e., in conditions where the heart and respiration are overactive, the capillaries contracted, the skin and kidneys inactive and the temperature high. Extreme restlessness and nervous hypersensitiveness are also quieted.

This indicates its particular field, which is in the early stages of acute fevers, when the pulse is full and bounding, the large vessels engorged, the skin dry, the urinary secretion diminished and the temperature high. In such cases the happiest results are obtained by giving $^1/_{1000}$ to $^1/_{500}$ of a grain of a reliable preparation of aconitine hydrobromide, (or, in its absence, 2 to 4 minims of the tincture of aconite) every 15 minutes until the pulse softens and the fever falls, and then as required to maintain the desired effect.

If the patient is a child, place one adult dose for each year of the child's age, and one more in 24 teaspoonfuls of water, and give one teaspoonful of this mixture accord- to the schedule already set forth.

It should be noted that, in the early stages of sthenic pnuemonia, aconite will not take the place of veratrum viride or veratrine, whose action upon the blood vessels is much more powerful than that of the drug we are discussing, but, in some cases, the two might well be combined, in proper dosage.

He that does not believe in others finds they do not believe in him.—Chinese Proverb.

"UP" AND "DOWN"

Someone has well and aptly remarked that the man who is "down" on a thing is usually the one who is not "up" on it.

Every man is fully entitled to his own beliefs and opinions, and any man who has a life-work of some sort and is interested in it is likely to have opinions along the lines of his activities which may be of much interest and practical value to others. But, when a man steps out of the field of his own work and attempts to set forth opinions regarding some other business or profession, it behooves him to spend some time in informing himself upon the subject which he purposes to expound. This, apparently, was not done by the "Engineer" who "talked on Medicine" in the March *Atlantic Monthly*.

All honor to Hahnemann, and to every sincere investigator in every field of science! All power and success to every honest and earnest Homeopathist!

We have no desire to belittle the importance of the former nor to decry the policies nor the practice of the latter. To us, it has never seemed necessary, in order to laud the attainments or success of one person or group of persons, to decry some other person or group.

If the "Engineer" had spent a minute fraction of the time occupied in making himself the ornament to his own profession which he, no doubt, is, in looking into the teaching and practice of that other profession which he presumes to discuss, he would have found out several things.

In the first place, he would have discovered that, while the practice of medicine still is, and probably will remain, for some time, perhaps always, quite largely an art (about as much so in one school of practice as in another), there are certain fundamental, scientific laws underlying *all* schools of teaching and practice.

He would have discovered, further, that if there ever was a tendency, among any large group of physicians, to deal with symptoms or "cases", rather than with *people* who were ill, that tendency is rapidly and surely disappearing. The modern physician of whatever school—in the lavishly appointed consulting-room in the city or at the bedside of the farmer's wife—is, today, recognizing more than ever before that his purpose is to restore to normal functioning a human organism that has gone wrong, and not merely to relieve a headache or a case of "biliousness".

If the processes of diagnosis ever were satisfied by giving a *name* to a certain complex of symptoms, that is not true today. The diagnostician is trying to find out wherein the condition of his patient differs from what is usually encountered in health, in order that he may be in a position to suggest measures for the correction of all such abnormalities.

To be sure, we do use names, but we use them as a means to simplification and clarification in our mental processes and in our intercourse with our fellows, and not as an end in themselves.

Words are, at present, necessary counters or tokens in playing the game of life—unwieldy symbols for expressing (or concealing?) our thoughts. Every profession has its own nomenclature whose advantages and limitations are well understood by all members of that profession, but generally not by other people.

In the medical, as in the engineering and every other profession, there are men who are no ornament to the craft; but, in the medical, as in every other profession, the vast majority of the workers are sincerely endeavoring to make themselves better men, better doctors or engineers or what not, and to make the world a safer and pleasanter place in which to live.

It will be well for all people to realize that, when they consult a Doctor of Medicine, no matter what additional labels, of his own or another's choosing, he may wear, the chances are enormously in favor of their finding a man who will look upon them as fellow human beings in distress and will bring to bear all the resources of a sound and well-developed science as well as those of a delicate and difficult art in the effort to restore them to that degree of health which is essential to comfort and happiness.

He who spits blood at another first defiles his own mouth.—Chinese Proverb.

ETHICAL ADVERTISING

The physicians of Tulsa, Oklahoma, have embarked upon an advertising enterprise which is unique and seems to promise results.

A young newspaper man got up a set of copy for a series of ads. in the leading Sunday paper, and 125 doctors agreed to finance the scheme, collectively. An ad. appears each week.

Nothing is said about any doctor or his work, but the matter of payment for medical services is brought home to the readers in a very personal way.

The heading of some of the talks are: "Is Your Last Baby Paid For?"; "How Much Do You Owe Your Doctor?"; "Swapping Doctors to Beat Bills!", and the like.

The *Medical Pocket Quarterly*, for June, 1925, tells about it, and information could, no doubt, be obtained from the Tulsa doctors (we will endeavor to obtain it!). Meantime, here is food for thought.

The people *ought* to know more about the physician and his work and problems, as well as what he is accomplishing for the good of the race. There ought to be some ethical way in which we can tell them some of these things. If this Tulsa scheme isn't good, what ails it? Who has a better idea to suggest? If "thou art the man", come across with it!

We need a broader, firmer and deeper faith in the people—that they desire to do right.—Coolidge.

DIGGING IN THE GARDEN

Now is the time when the gardener should be in the height of his glory; for, not only lettuce, radishes and "scallions" should be adorning his table but peas, string-beans, beets and perhaps other things should be materially reducing his household expenses and increasing the satisfactoriness of his diet (no vegetables are ever so fresh or so good as those you gather in your own garden and cook before they

have been wilted!) as a reward for his labors, last spring.

The edible rewards and pleasures are, however, the least of the benefits realized by the thoughtful and enthusiastic gardener, though these are not to be despised.

The physical exercise required to keep a good-sized garden in condition is fully equal to that obtained by playing nine, or perhaps eighteen, holes of golf, two or three times a week, with the added advantages that it may be indulged in at odd hours, when golf would be impossible and that, instead of being a heavy expense, it is, frequently, a source of pecuniary profit.

Do not think that we would belittle the ancient Scottish game. It is a grand and glorious institution and has, we believe, saved many lives and added much to the sum of human efficiency; but, though it is a very ancient game, gardening is an older one, and, when one considers the struggle with weeds and drought and blights and six-legged (as well as legless and two-legged) invaders of various sorts, it does not stand second in the elements of competition and sporting chances, to any game we know.

Remember the story of the old Greek wrestler who could never be vanquished because, every time he fell upon the earth, strength flowed into him from the contact with his Primeval Mother and he sprang up to renew the contest with redoubled vigor?

There is something like that about gardening—a spiritual aspect, if you will. When you dig in the rich mold with your hands, some etheric and impalpable thing flows into you and cleanses and renews you. You can not really work in a garden and harbor thoughts of jealousy or resentment against any man. It isn't the farmers and the gardeners who are flooding the country with crime until right-minded people are aghast!

The earth of the garden is not "dirt", but has a certain primitive sweetness; and its stains upon the hands or the clothing are never a matter for reproach or shame, as are the smudges (physical and mental) which we acquire in many of our pursuits.

And then, there is the thrill of creation. Someone said that he who makes two blades of grass grow where but one grew before is a public benefactor; how much more so if, instead of grass, he propagates carrots and spinach and tomatoes!

Of course, you do not *grow* the seeds, but you are a cooperator with God in their growing. Without your help, He could not have made them grow at that particular time and place. He seems, too, to have cultivated and developed our world much like a garden, planting one race here and another there, as the soil and climate seemed most suitable; choosing and preserving the best specimens as seed for next year's crop; pruning and grafting—trying whether, in this way or that, He could not make the garden better.

Get out into the sunshine, where the birds are singing and the beans are in blossom and tassels are showing on the corn, and dig your fingers into the earth and pull weeds. If anyone has wronged or slighted you—forget it! Uncoil the feelers of your soul and sense the spiritual significances of the thing.

Get out and dig in your garden!

A man lives on one-third of what he eats; the doctor lives on the rest.—Old Saying.

METHANOL

One hundred million dollars seems like a large sum of money, and, if one thinks about losing it, it seems larger still; yet, it looks, just now, as though a group of people in the United States were about to lose that amount at one fell swoop.

The group to which we refer is those people who are engaged in the production of methyl or "wood" alcohol, and the sum mentioned is what is now invested in this industry.

It costs somewhere in the neighborhood of 50 to 60 cents to distill a gallon of methyl alcohol from billets of wood, or other forms of cellulose, by the methods now in use in this country, and the product, which is quite extensively used in industry (other than the manufacture of bootleg "hootch"), sells for from 65 to 80 cents a gallon.

The latter part of last year, there appeared in the American market, imported from Germany, 60 or 70 gallons of *synthetic* wood-alcohol, known as methanol, which was sold for about a dollar a gallon. A month or two later, about the same quantity came in, but sold for around 80 cents a gallon.

Nobody felt any uneasiness when this happened, for the amounts imported were trifling and the price was above that for which distilled methyl alcohol could be profitably sold.

When, however, in February, of this year, a total of 62,971 gallons of this interesting product landed on our shores and was sold for about 46 cents a gallon; while in March the quantity rose to 69,886 gallons and the price fell to 37 cents a gallon, the wood-alcohol industry awoke with a gasp from its lethargy to find ruin staring it in the face.

Since that time, the problem has grown more, rather than less, acute, for it is rumored that, with constantly improving knowledge and technic, the Germans will soon be able to manufacture methanol which can be profitably sold for 10 or 12 cents a gallon. As the present duty on this substance is 12 cents a gallon, and the absolute maximum possible, under the present law, is 18 cents, the handwriting on the wall is tolerably legible.

What is the answer? Nobody knows, very definitely, at the present moment, but here are a few facts which will probably be considered in arriving at a solution.

The basic patents under which methanol is manufactured were among those seized by the Alien Property Custodian during the War and later sold, together with thousands of others, to the Chemical Foundation, for the benefit of our Government and of American chemical industry, in general. It is, therefore, possible for some chemical firm or firms in the United States to set about the synthetic manufacture of this compound at home, though they would, of course, be handicapped at first by lack of knowledge of the progress made in this line by German chemists since the War.

Another very interesting angle to this situation is the fact that (so we are creditably informed by those who are in a position to know), in the same chemical series with methanol, and covered by the same basic patents, it is highly probable that a new substance will shortly be discovered which can be used as a motor fuel, to supplement or replace the fast-diminishing supply of gasoline.

There is a moral to this tale. In chemistry, there lie some of the most potent secrets which will, within comparatively few years, revolutionize, in many respects, the life on this globe; and the nation which puts forth the greatest efforts and realizes the most far-reaching results in chemical research and manufacture bids fair, presently, to be the nation which will be able to shape the policies of the world.

Are *we* going to be the nation? Or shall we, by reason of our blind lethargy and self-conceit, permit another to take from us a leadership to which our intellectual and material resources, *if rightly* and *vigorously used*, entitle us?

Men do not make laws but discover them.—Coolidge.

BIRTH CONTROL

How many constitute a "family"? Who should properly decide how many children a woman shall have and when? What part does reproduction play in the cycle of family life? Is quality or quantity of more importance in our citizenship? Is there any moral aspect to these questions? And, if so, is venereal disease prevention any more "moral" than the prevention of conception?

These are a few of the many questions which rise in our minds in connection with the active discussion which is going on in the medical and lay press at the present time and which we must think out and decide for ourselves before we can be in a position to meet a growing demand for information in regard to methods of birth control.

In the United States, it is not only lawful but considered highly commendable to disseminate information regarding the prophylaxis of venereal disease; but, it is unlawful to disseminate such information regarding the prophylaxis of economically, eugenically or sociologically undesirable pregnancies. To such an extent is this carried that it is extremely difficult for an interested American physican to procure for study the valuable books on contraception which are being published in England.

In our Mother Country, as will be surmised from the last sentence, the reverse condition obtains; venereal prophylaxis is frowned upon and contraception is encouraged.

No physician would hesitate to give his assistance in preventing conception to a woman who suffered with chronic nephritis or a deformed pelvis, or to one who was feeble-minded or mentally alienated. If this assistance is morally right for the preservation of physical welfare and for the limitation of procreation of the mentally unfit, it is hard to see why it would be wrong if the object was the preservation of the economic welfare and the encouragement of the procreation of the mentally fittest. This

question is one, however, which each man must decide for himself.

The proponents of birth control declare, with much reason, that, as it is the woman who bears the child, it is she who should have the right to decide when and under what circumstances the birth shall take place. As it is, however, upon the shoulders of the man, in most instances, that the financial support of the family rests, it would seem that he should be entitled to a word in the matter. To us, it seems that this is a question which should be decided only after a frank, loving, altruistic and clear-sighted discussion between the *two* prospective parents.

It is not necessary to go into the conflict between the disciples of Malthus, who foresee an overpopulated globe, and the compilers of modern statistics, who tell us that birth rates are steadily declining all over the world. Neither is it necessary to remind us that miners and section-hands usually have larger families than do college professors.

The point seems to be that those whose offspring would be of most value to the country and to the world are already practicing contraceptive measures, a knowledge of which, under our present laws, we are forbidden to impart to those whose use of such knowledge would be productive of the greatest advantages.

Havelock Ellis seems, of all living writers, to have grasped most firmly and stated most forcibly and beautifully a fact with which we are all conversant, namely, that, so far as success and happiness in the marriage relation are concerned, they rest upon the complete and mutual consummation of sexual union and, to an almost negligible extent upon procreation. Granting this premise, it follows that such unions would be far more adequate and satisfying if they could be released from the fear of an undesired pregnancy.

The opponents of birth control have many arguments which are sound and uncontrovertible, but most of these are based upon considerations of world-progress and the welfare of future generations; while the problem remains, for most people, an intensely *personal* and vital one.

Whatever may be our feeling upon this subject, on moral, hygienic, sociological or utilitarian grounds, the fact remains that *birth control is now here*, and that, at the present time it is understood and practiced very largely by the class of people whose progeny are most necessary to our national progress, while it is unknown or unheeded by the people whose descendents we would most like to see limited.

We all admit that we do not know any absolutely sure method for preventing conception, and that many of the methods practiced are physically harmful in certain cases. There was a time when we knew no sure method for preventing small-pox and malaria, but we went about a systematic *study* of the matter and found the answer.

As contraception is an accomplished fact, and as it is a matter which intimately concerns the physical condition of this and coming generations, it seems to us that, firmly believing that the decision as to when and in what manner it shall be practiced should rest upon the fully-informed physician, we should proceed to study it in the same diligent and unbiased manner that we attack any other scientific problem, undeterred by the shrieks of uninstructed fanaticists and unbefuddled by the tearful pleas of those who desire to escape the responsibilities of parenthood for purely selfish reasons.

A government makes a man free only in so far as his freedom does not interfere with or infringe upon similar rights to other men.—Dawes.

THE CRUELTY OF SURGERY

By common consent (or is it the demands of patients?) major surgery is done, nowadays, under more or less complete anesthesia, local or general.

Blood tests, hygiene, records of this and that, all come into the picture to determine when, what and how much anesthetic is to be used. In fact, in these days of the specialist, we naturally have the expert in anesthesia.

We may say what we please about "third molar specialists" and gynecology as a separate branch of surgery, but there does seem ample ground for approval of the classification "Specialist in Anesthesia".

We are agreed that it is the patient and not the surgeon who takes the risk; a life against a reputation. The knife *may* compel the patient to put one foot in the grave; the anesthetic *certainly* does.

But what about the anesthesia for local or minor surgery? The very word, minor, is a relative one because, when applied to a particular patient, any operation may be major, no matter how relatively small it may be.

Here we have at stake the patient's welfare, if not his life, and the surgeon's reputation.

The work of the research physiologic chemist has kept pace with the requirements (demands) of the surgeon and much continues to be done in the way of developing and perfecting such discoveries and products as have been recorded.

Many local anesthetics have been so long in the hands of the profession and so favorably commented upon that they are standardized and generally accepted. The fact remains, however, that much operative work is still done without the far-reaching, beneficial effects of any anesthetic.

In cases like these, where the welfare of both doctor and patient is at stake, it would seem the part of professional wisdom to protect one's reputation by using every possible measure for the patient's comfort.

The cruelty of surgery is inexcusable because of the fact that three opportunities for guarding and protecting the patient are presented to every surgeon about to perform a minor operation. These three opportunities are preoperative, operative and postoperative.

Using a carefully selected local anesthetic, it means much to the patient to be assured in advance that, "Of course, I will use a local and you will not feel it." Such a remark allays apprehension and secures patient cooperation that means much, later on, when quick repair is desirable.

A greater cruelty is to neglect the use of any anesthesia when it could easily be had both for the operation and for the frequently painful, subsequent dressings. Fear has much to do with delayed repair and the progressive surgeon will do everything in his power to secure successful results and to have a satisfied patient bragging about his doctor and his quick recovery.

Too frequently, little thought is given the question of pain during the postoperative treatments. Here the milder anesthetics, such as anesthesin, butesin picrate, saligenin and quinine and urea hydrochloride may be used to good advantage; as in the operation itself we use procaine, cocaine, butyn or some other of the stronger anesthetics, adapted to the conditions of the particular case.

The cruelty of surgery has not yet invaded our legislatures. It is not a subject for statute law (yet), but should come under the laws of common sense demanding the use of a well-selected anesthetic at every opportunity when the comfort of the patient suggests it.

"GOD made man in His own image, but He took a hundred million years to do it. From the dust slowly shaping the life-germ into worm, reptile, fish, bird, beast—at last into man, the being who thinks, laughs and speaks. The blind impulse to leap off a cliff, which we all feel at times, is the nerve-memory of our former bird life.

"None of these things in us dies. They are of the fiber of our being. As we control these elemental forces we are human. As we yield to them we sink into the animal."

Thomas Dixon, in "The Love Complex".

Leading Articles

X-Ray Diagnosis in Pulmonary Tuberculosis

By R. S. E. MURRAY, B.A., M.D. (Tor.) National Sanatorium, Tenn.
Roentgenologist, National Sanatorium, N. H. D. V. S. Tennessee.

THE application of roentgenology to the study of tuberculosis of the lungs is widely accepted as one of the most important diagnostic aids by which both the individual sufferer and attending physician can be benefited. This paper is intended to present the modern roentgenological viewpoint in an incisive manner, unencumbered with high technicality. The opinions expressed are based upon a familiarity with the x-ray work on 8,070 war veterans, embracing probably 60,000 films. In addition to the routine admission work, in which the accessory sinuses and thorax are radiographed, reexamination is conducted every three months.

In opening the discussion on this subject, it is well to state certain premises which shall confine the argument to definite boundaries. Two conditions are to be taken for granted: First, that the roentgenologist shall be a highly qualified physician of wide experience in his chosen speciality and particularly well grounded in the fundamentals of anatomy, physiology and pathology. Undoubtedly, the roentgenologist without medical degrees may be capable of a very high standard of x-ray work but its full value in the matter of interpretation, expression and corelation of x-ray film shadows cannot hope to compete with that of a qualified physician-roentgenologist. Second, that all stereoscopic skiagrams shall express the highest and latest technical accuracy and shall be minutely examined under ideal conditions of illumination on a true vision stereoscope.

In regard to single films, there is much to be said in favor of the flat plate; but, why advocate such, when the innumerable possibilities of the well taken stereoscopic pair are so obvious. Furthermore, it may safely be said that the work of the roentgenologist will inspire confidence only in direct proportion to the breadth of his medical education and diagnostic acumen, rather than the excellence of the pictures, which may be produced in his laboratory. From this preface, it will readily be seen that we must entertain some discussion of associated subjects, in order that subsequent remarks may be entirely understood.

Anatomy

The anatomy and histology of the lung is briefly as follows. The bronchial tree embraces the bronchi and ramifying bronchioles, each one supplied by branches of the pulmonary artery and vein and ramifying arterioles and venules respectively. The lymphatics are similarly distributed. In the lung periphery these associated blood vessels, lymphatics and respiratory ductules constitute the lobules. These lobules are wedge-shaped with the point directed towards the lung root or hilus. In disease, all the tissue structures of one or a number of lobules take part in the pathological reaction, giving rise to the somewhat characteristic fan-like configuration, so frequently encountered in the upper thirds of both lungs.

Histologically, the pulmonary arterioles center in the lobules and give off final branches to all the alveoli. The delicate walls of these terminal air cells bear the capillary net-work which bridges the pulmonary arterial, carbon-dioxide-carrying vessels and the pulmonary venous, oxygen-carrying vessels. This is the pulmonary circulation. The function of the bronchial arterial circulation is purely nutritive.

In regard to the lymphatic system, it is important to realize that there are no lymphatics in the terminal alveoli. This lack of a lymphatic capillary system in the alveoli may reasonably explain the stasis of substances produced pathologically at that point. This may account for the characteristic mottling of an acute socalled miliary process when examined radiographically. Subsequent healing leaves in its wake numerous small, bead-like areas of calcification occurring at regular intervals along

the lymphatic trunk ramifications. The distribution of parenchymatous lesions coincides with the lymphatic distribution.

A point of interest is the fact that the pleura is rich in valve-bearing lymphatics. These valves open towards the pleura, which gives us a valuable hint of the hydrostatic cause of the formation of serous effusions within the pleural cavity and other body cavities lined by serous membrane.

In regard to the formation of lymph nodes, it is well to recall that these develop at the bifurcations of the lymphatic tree, those glands nearest to the hilus being the largest. The study of this anatomical feature is thoroughly germane to the roentgenology of the chest, as outlying, active lung pathology is always subtended by an indurated, interwoven lymphatic distribution. Healing leaves these trunks expressed as harsh string-like shadows with well-beaded bifurcations.

The reticulum or connective tissue of the lung follows the general conformation of the bronchial tree. This anatomical structure must not be lost sight of, as some pulmonary affections cause chronic thickening of the connective tissue, which to the unwary interpreter may be mistaken for chronic induration of the pulmonary lymphatics of tuberculous etiology.

Physiology

The physiology of respiration concerns the nicely interrelated balance between the arterial and venous pulmonary blood flow, on the one hand, and the oxygen and carbon dioxide exchange on the other. Bearing this in mind, we must be prepared to interpret some of the changes in the appearance presented in the chest film of a pulmonary case, as manifestly due to a compensation, following changes in the physical or biochemical equipoise, or both. A few examples will illuminate this point. For instance, emphysematous distension of part of one lung may result from chronic loss of function in some other respiratory area. The barrel-shaped chest is the result of the lifting action of the upper extrinsic respiratory musculature, which is encouraged by lack of sufficient oxygen absorption over a long period of time. Deviation from the normal position of structures occupying the mediastinum is entirely a compensatory change of position due to various causes, prominent amongst which will be found those due to pleural effusions, spontaneous pneumothoraces, cicatricial contractions in fibrous tissue and spinal curvature. These matters will be more fully developed further on.

Pathology

The pathology of tuberculosis of the lungs is best divided anatomically in three fields, namely, that associated with the bronchial tree, that involving the pulmonary parenchyma and that affecting the investing pleura.

Pathology involving the bronchial tree is characterized by infiltration or clouding and thickening of the hilus configuration. Dense shadows formed by a combination of enlarged glands, edematous lymphatic ducts and thickened air passages will be noted. The posterior mediastinal space will often appear clouded, due to chronic adenitis of the mediastinal and peribronchial lymphatics, when the patient is examined by the maneuver of oblique fluoroscopy.

Pathology of the parenchyma itself begins as all inflammatory processes begin, namely, as a diffuse hyperemia and swelling, which the combined cellular and chemical mechanism of the blood endeavors to localize. This rapidly proceeds to the formation of tubercles by an obliterative process developed first within the alveoli and later within the lobules. Microscopically, the center of each tubercle is filled with caseous material, homogeneous in character. Towards the periphery of each tubercle, we find giant cells and large numbers of endothelial cells. Connective tissue infiltration with leucocytes surrounds the tubercle. This pathology gives the characteristic soft mottling of activity. In the more advanced cases, the caseation becomes confluent and, consequently, cottony in appearance. In rapidly caseating types the large areas of consolidation have the appearance of infarction.

Where the disease affects the serous membranes, the same picture of clouding due to pathological thickening is to be found. Should the affected membrane become fibrotic, it will show permanent haziness on repeated x-ray examination. In active cases small subpleural tubercles may sometimes be observed. This will give a slightly mottled appearance to the pleura. This phase will be accompanied by effusion. In cases which develop inflammatory reaction in the visceral pleura, the homogeneous clouding is quite sharply demarked and corresponds to the position of a lobe. Thickening of the pleura is a very common feature of an advanced tuberculosis.

Roentgenology

Roentgenology *per se* is the study of shadow architecture. It is necessary that the interpretation of x-ray shadows at all times reflect great attention to the smallest detail. In order to thoroughly appreciate that which is pathological, the normal anatomical shadow picture must be very clearly visualized. The roentgenologist must have an indelible mental impression of the healthy chest. In this connection it must be remembered that, in the normal chest, a faint, somewhat linear interrupted, net-like configuration is to be found. Furthermore, to be acceptable, all x-ray films must show this fine marbling. It is well to observe that the latitude of normal variation is fairly wide and the thickness of the chest wall is an inconstant factor to be duly weighed. It is also necessary to have a very clear conception of the configuration which is caused by pulmonary disease other than tuberculosis.

We have two methods of examination, each of which has decided advantages. With the fluoroscopic screen we are able to study the actual movements of the lungs and heart. We are able to turn the patient from side to side, noting the fluidity of an effusion or the rise and fall of the diaphragm. The lack of respiratory balance can often be measured by calipering the positions occupied by the right and left diaphragm at the end of inspiration and expiration. Shadows, clouding and cavity formation can also be observed through the fluoroscopic screen, but it would be most incautious to base an opinion upon such evidence. The size, shape, position and pulsation of the heart can be closely studied, and subsequently corelated with the lung findings.

In radiography, we have a definite scientific method of recording all shadows produced by the passage of the x-ray through the thorax at any particular moment. Well-taken pictures are records of a similar nature. Thus, the personal equation can be reduced to nil. In addition, the stereoscopic pair gives us an ingenious means of introducting the third dimension to our study of the contents of the thoracic cavity. By this procedure, the position of a point of interest can be determined with surprising accuracy.

In regard to the actual shadows themselves, the question now arises as to whether a definite mark or configuration can be always interpreted as definitely due to a tuberculous process. In answer, be it said that, although there is no definite signature which must be found written into every film to spell tuberculosis of the lungs, still, in all but the small group of borderline cases, to the practiced eye, the configuration is remarkably characteristic.

In considering the interpretation of the film shadows, the greatest care must be exercised in evaluating the influence of pathology, not only on adjacent anatomical structures but also on more remote parts or viscera. In other words, before reaching a decision, the skiagrams of the thorax are viewed both *in toto* and *in partes*. At this juncture, it is felt that the best impression of the value of the roentgen-ray shadow will be obtained from following two cases through the gamut of initial and reexamination data. These x-ray reports are borrowed from *bona fide* cases. Of course, the names and dates are fictitious. One case of rapid deterioration and fulmination is chosen and, for comparison, another representing the roentgen course of a "cure".

Admission Ward
Brown, John Jan. 1, 1921.
Case No. 1000.

ROUTINE X-RAY EXAMINATION
1st Report.

Sinuses and Mastoids: The right antrum of Highmore shows a dense clouding, which is probably due to a chronic focal infection.

Thorax: (Stereoscopic) Small, poorly developed, rather barrel shaped. No mediastinal deviation seen.

Left Lung: The lymphatic trunks radiating from the hilus throughout the lung field are a little exaggerated. The first interspace trunk and paratracheal lymphatics subtend two definite fan-like areas of parenchymatous haze lying high up in the shoulder and along the vertebral column respectively. The diaphragm is a little high. Fluoroscopy discloses some loss of excursion of the diaphragm on this side.

Right Lung: Beyond some peribronchial and peribronchiolar thickening and a few scattered calcified nodes which appear well within the confines of the central hilus, we note nothing in the upper half. The descending trunks are somewhat soft and string-like in appearance.

Heart: Normal in position but rather small and elongated in shape.

Bones: The sternal extremity of the first rib is ossified on both sides.

Finale: An early active lesion in the upper third of the left lung with minimal evidence of healed hilus tissue on the right and basal lymphatic induration. The latter is probably a concomitant feature of sinusitis.

This patient left the hospital against medical advice. The anamnesis, clinical record and laboratory findings were entirely confirmatory. It might be remarked here

that an uncontrollable *wanderlust* seems to obsess the mental vision of the unfortunate tuberculous patient. Cases beyond count travel from place to place against the best medical advice. This phase is of psychiatric interest. The indefatigable optimism which these patients show is probably an expression of some unknown selective cortical intoxication.

Admission Ward
(Readmission)
Brown, John Jan. 1, 1924.
Case No. 1000.

X-RAY REEXAMINATION
2nd Report.

Thorax: Stereoscopic reexamination of this man's thorax shows marked pathological changes in both lungs.

Left Lung: The whole lung is homogeneously clouded by thickening of the parietal pleura. The dome of the diaphragm is very high and uneven in outline. The apex, first, second and third interspaces anteriorly embrace a very dense mottling of the parenchyma which is in direct association with the ramifications of the lymphatics which radiate outwards and upwards from the hilus. These trunks are thickened, multiple and interwoven. In the lower half of the lung, a more scattered mottling is noted. A small area of excavation is seen behind the middle third of the clavicle.

Right Lung: The first and second interspace trunks on this side subtend an extensive area of parenchymal pathology which is expressed as a soft mottling. The greatest density of this mottling will be noted in the subclavicular triangle. The lymphatic striations have become dense and are poorly defined. The induration of the lymphatic trunks at the base has increased.

Every ninety-day examination showed marked increase in pathology. The clinical picture and laboratory findings followed suit.

Admission Ward
Brown, John Jan. 1, 1925.
Case No. 1000.

X-RAY REEXAMINATION
6th Report.

Thorax: Stereoscopic examination of this man's thorax shows further advance in the pathology of both lungs.

Left Lung: Nearly the whole of the upper third of the left lung embraces a thick-walled area of confluent cavitation, which clearly connects with the lung root. The parenchymatous mottling is remarkably dense throughout the rest of the lung. The two diaphramatic sinuses are entirely obscured by an effusion. The thickening of the parietal pleura has increased.

Right Lung: Immediately behind the clavicle is a single thick-walled, fluid-containing cavity the size of a walnut. A definite fluid level is seen. The whole of the middle third of the lungfield shows great density which is due to a combination of thickened pleura, parenchymatous infiltration and fibrous tissue formation. In the axillary region is a thin-walled annular shadow, which is doubtless a small area of spontaneous pneumothorax.

Mediastinum: The mediastinal contents are drawn strongly to the left by the cicatricial contraction of fibrous tissue, and the effort of the body to splint the more diseased lung.

Following a severe fit of coughing, the patient developed a hemorrhage which proved fatal. This is a case in which the result of neglect is clearly demonstrated. The initial examination definitely showed signs in the hilus region of an early childhood infection. The active infiltration of the parenchyma at that time, if properly controlled by intensive methods of treatment, would probably have become healed and the patient returned to social and perhaps economic stability.

Let us now follow the course of a case which terminated as arrested pathology.

Admission Ward.
White, John Jan. 1, 1921.
Case No. 1001.

ROUTINE X-RAY EXAMINATION
1st Report.

Sinuses and Mastoids: No pathology is noted.

Teeth: The third right mandibular molar is impacted and infected.

Thorax: (Stereoscopic) Well balanced, cone shaped. No mediastinal deviation is noted.

Left Lung: The apex, first and second interspaces display a definite soft granular mottling of the parenchyma which is in confluent association with the distribution of the paratracheal, first and second interspace trunk lymphatics respectively. The upper half of the lung, corresponding to the upper lobe, shows a faint homogeneous clouding which is probably the result of thickening of the pleura. High up in the shoulder region is a small annular shadow which lies in direct contact with the posterior chest wall. This is doubtless a small locus of spontaneous pneumothorax, or a small closed cavity.

Right Lung: Two areas of fine granular mottling are noted on this side. One high up in the apex and the other out in the axilla. The respective interspace trunks are multiple, fibrous and interwoven. No cavitation or pleural thickening noted.

Heart: Normal in size, shape and position.

Bones: No pathology is noted.

Finale: There is an area of definite activity at the position of the annular shadow noted on the left side. The rest of the mottling suggests healing change, over both lungs.

Every three months the patient was reexamined. The history, clinical and laboratory findings were confirmative.

Ambulant Pavilion.

White, John Jan. 1, 1922.
Case No. 1001.

X-RAY REEXAMINATION
4th Report.

Stereoscopic examination of this man's thorax shows definite improvement. On the left side, the annular shadow has disappeared. The mottling is beginning to fade out. On the right side the most prominent portion of the picture is the exaggerated fibrous upper interspace trunk lymphatics which are becoming beaded.

The patient went home on a furlough.

Admission Ward.

White, John Jan. 1, 1924.
Case No. 1001.

X-RAY REEXAMINATION
5th Report.

This patient was accepted as a readmission.

Stereoscopic examination of this man's thorax shows only the faintest trace of the granular mottling in the upper third of the left lung and apex and axilla on the right. The ascending interspace trunk lymphatics on both sides are mutiple, fibrous and string-like and show definite beading at the lymphatic bifurcations. A certain amount of clouding of the basal lymphatic trunks is noted on both sides. On this latter account please return for sinus x-ray.

X-ray examination of the teeth confirmed the findings of the impacted molar of January 1, 1921. It is felt that the patient's continued complaint of lassitude with occasional headaches and upset stomach is probably the result of a severe toxic absorption from the impacted tooth, the roots of which have become necrotic.

Admission Ward.

White, John Jan. 2, 1924.
Case No. 1001.

X-RAY OF SINUSES
6th Report.

Stereoscopic examination discloses clouding of both antra; our suspicions are thus borne out.

Appropriate dentistry and cleansing of the sinuses returned the patient to excellent health. Three months later he left the hospital, recovered.

These two cases present the extremes, but between the rapid pathological case and the healed type are a hundred variations of the theme. Numbers of patients seem to go on for many years without much change. On the other hand, severe miliary cases develop at times a resistance which is astonishing. Also, comparable with lobar pneumonia, the smallness of the area of a lesion is no criterion by which to judge the prognosis. One must be prepared for almost any eventuality in pulmonary tuberculosis.

Differential Diagnosis

We must now give some consideration to certain other pneumopathies, which are to be differentiated from pulmonary tuberculosis. These will include the pulmonary effect of focal infection in the sinuses, healed chronic influenza, pneumonia, pneumoconiosis, bronchiectasis, intrapulmonary suppuration, neoplasm, syphilis and fungoid growths. These conditions have been arranged in the order of their frequency.

It will be noted that I have taken particular care to classify the pulmonary effect of sinus infection, at the head of the list. In a prolonged study of over 1400 cases in which both sinuses and thoraces were radiographed, very definite conclusions have been reached in regard to the secondary effect on the lungs of chronic sinusitis. As current literature shows an unusual paucity of discussion on this important feature of the x-ray and physical examination of the chest, it is my pleasure to present a brief résumé of my findings.

The Nasal Sinuses and the Chest

The cases above mentioned were not specially selected in any way. They represent a solid, unbroken group of first admissions. During the winter months 44 percent had the roentgenographic signs of sinus disease, ranging all the way from a severe pansinusitis to temporary coryzal catarrh of one antrum. In the summer months, this percentage fell to about 28. In practically all these cases the history, clinical course and special sense examination confirmed the x-ray findings in the head.

The vitally interesting feature of these cases lies in the chest findings. On physical examination moist râles are heard at the bases of both lungs. There is always an associated catarrhal cough, the sputum from which is probably a mixture of mucus from the bronchi and exudation from the infected accessory sinus. The chest films show a definite clouding and multiplication of the lymphatics supplying the lower halves of the lungs. This configuration is undoubtedly due to a local lymphatic edema, which is probably a reflection of some disturbance in the vasomotor nervous system. So characteristic are these basal appearances that subsequent x-ray of the sinuses has been gratifyingly confirmatory. The result of this work is already apparent. All cases have routine sinus examinations and lung and sinus findings are carefully corelated. Let

me present a case of this kind in order to more fully justify my standpoint. It is one of a great many.

John Black was admitted to the hospital with a diagnosis of pulmonary tuberculosis. He had a chronic cough, expectorated about an ounce in the morning, was under-weight and complained of headaches, poor appetite and malaise. The clinical course was not at all typical of tuberculosis. Let us read the routine x-ray reports.

Admission Ward
Black, John Nov. 1, 1924.
Case No. 1002.

ROUTINE X-RAY EXAMINATION
1st Report

Sinuses and Mastoids: There is some clouding of the right frontal and ethmoid and great density of the right antrum of Highmore.

Thorax: (Stereoscopic) Well balanced, cone shaped; no mediastinal deviation seen.

Left Lung: The hilus striations which supply the base are multiple and indurated. There is also a faint homogeneous clouding which suggests passive congestion.

Right Lung: The picture on this side is very similar to that noted on the left, only more clearly delineated.

Heart: Normal in size, shape and position.

Bones: No pathology noted.

Finale: The x-ray findings at the bases of both lungs are entirely compatible with a concomitant chronic sinusitis.

This patient received treatment for sinusitis at the eye, ear, nose and throat clinic. In three months, the sinuses were clear and the clouding and lymphatic induration found previously in the lung bases, had disappeared. The entire physical condition of this patient warranted his return to active economic life. At his own request he was discharged. The underlying reason for this wide-spread sinusitis has not been worked out. Perhaps it is a repercussion from the influenza epidemic or merely a recent find accruing to intensive x-ray research.

Influenza

Influenza is nearly always encountered in the healed form. The x-ray picture is characteristic. The hilus striations and ramifications are firmly chalked into the film. This configuration is distributed evenly over both lung fields without predilection for any special region. These string-like shadows are not beaded and consistently fail to subtend clouding or mottling in the outlying lung fields, unless, of course, associated with a tuberculous lesion, which is sometimes the case. The influenzal lesion coincides with the reticular anatomy of the lung.

Pneumoconiosis has much the same even distribution, but there is a markedly accentuated density of these shadows within the confines of the central hilus. In this condition the walls of the bronchi and bronchioles become chronically indurated. Particles of foreign matter gradually become densely packed into the connective tissue of the lung.

Pneumonia produces a lobar density which is usually unmistakable. In tuberculous bronchopneumonia, there is a soft, massive mottling, not necessarily confined to one or more lobes. A small group of lobules only may be so disturbed. In bronchopneumonia, the soft mottling is rather more lobular than lobar in distribution.

In *bronchiectasis* the hilus lymphatic trunks appear to be almost dilated within the hilus zone, the outer branchings do not gradually decrease in size, but appear to fade away rather quickly. The configuration is well described in being pollard-like. Sometimes the small half-moon figures can be noted in the lower halves, caused by pouching of the alveoli.

Abscess of the lung is usually seen as a circumscribed massive density not confining itself to any particular anatomical structure. An areola of great induration attends this formation. The opposite lung will show unusual clarity, which is probably due to a compensatory emphysema.

Metastases from neoplasms can produce mottling and density which might be confusing, but the size, shape and position of a tumor mass reaching out from the mediastinum will provoke further investigation and the ultimate opinion should hardly be in error.

Syphilis of the lung is quite suggestive of a healed tuberculosis. The mottling is granular, but does not display a special predilection for the upper thirds. Also, it is without the common bizarre tendencies, so manifest in pulmonary tuberculosis. Also pulmonary syphilis is not frequently encountered.

Fungoid or aspergilliform growths are productive of larger spherical shadows which have a suggestive asterisk appearance.

Photograhpic reproductions of chest films have been purposely omitted. Apart from rarely adding an increment of information, they are often confusing.

Diathermy in Biliary Affections*

By DISRAELI KOBAK, M. D., Chicago
Attending Physiotherapist, Cook County Hospital, Chicago

CERTAIN inflammatory diseases of the biliary apparatus still represent perplexing diagnostic and therapeutic problems, in spite of the forward strides made by surgeons, internists and pathologists.

If we select hepatitis as a type for the purpose of illustration, we confront pathophysiologic revelations, which have been unknown to clinicians even as late as a decade ago. We were then taught to accept hepatitis as a pathologic entity; but we know today that aplasia and hyperplasia, atrophy and hypertrophy, may and do coexist in the liver, and this can only be interpreted as nature's way of endeavoring to salvage the viscus, and compensating disturbed metabolism.

The recent development and simplification of the socalled functional liver tests have placed in our hands the means of arriving at a fairly accurate estimate of the disturbances of liver function, as has been repeatedly demonstrated by autopsy checks.

In spite of advances in pathology and diagnostics of the biliary apparatus, therapeutically we have made little if any progress since Struempell recommended high, cold enemata as a means of controlling icteric affections. Our efforts have been, and, as a general proposition, still are, restricted to the relief of pain, jaundice, dyspepsia and ascites—in other words, a therapeusis which aims at secondary phenomena but ignores the primary cause.

This reproach is to be laid squarely at the door of the clinician. He is unwilling to avail himself of the functional liver tests because they appear complicated and involve hospitalization of the patient, and loses valuable time before making a diagnosis of involvement of the biliary apparatus; for, when the pathognomonic symptoms make failure of recognition impossible, the disease has already made serious inroads, and the prognosis even under the most rational and scientific care is dubious.

Space and time forbid further expatiation of these tests; suffice it to say that the simplicity of the technic is equal to that of any intravenous injection, and hospitalization for a brief period is a convenience rather than a necessity, to afford the diagnostician the facility to read off the results. This could be accomplished, under favorable conditions, at the patient's residence.

We owe a debt of gratitude to Bayliss, Pavlov and Claude Bernard, whose splendid original labors relating to biliary metabolism have paved the way for a better understanding of the pathology of biliary disease. Once this has been grasped to the fullest extent, it will become clear that little can be hoped for from drug therapy, because no medicament known to pharmacology can have any pronounced influence in inflammatory processes of deeply situated viscera.

Fortunately, we need not idly fold our hands as therapeutic nihilists, for, assuming that a diagnosis of biliary disease has been made before too much tissue has been rendered functionally useless, we possess an agent which can influence deep inflammatory processes with the promise of a *restitutio ad integrum*, and this agent is *diathermy*.

Before investigating whether this claim is physiologically and clinically tenable, we must first agree on the character of the situation we are to attack.

The Physiology of the Liver

We know that the physiologic importance of the liver lies in its ability to elaborate the energy values which enter the body as food. It is, in other words, the sorting-station through which takes place the metabolism of the many substances entering via the portal system.

Claude Bernard has shown that the liver stores carbohydrates in the form of glycogen, which changes into sugar and supplies the various needs of the body. The influence of the liver on proteins and on purin metabolism is too well known to need more than mention; but, as true and renal gout are identified with disturbance of purin metabolism, the thought suggests itself that treatment of a pathologic liver may very favorably affect gout in either form.

The detoxifying power of the liver is of special interest to us with reference to alkaloids. An experiment by Schiff is noteworthy. This investigator killed, with a

*Read at the Seventh Annual Session of the Western Physiotherapy Association, Kansas City, Mo., April 17, 1925.

small dose of nicotine, frogs deprived of their livers, while the same dose produced no effect on normal frogs.

The author has been so fortunate to make this clinical observation repeatedly; patients suffering from biliary disease show unusual symptoms of toxicosis from the use of even small quantities of tobacco. Whether this effect is due to nicotine or pyridine is immaterial, as both are alkaloids. The clinical observations may be questioned, but, when it is recalled that a well-known surgeon, with a history of biliary trouble, could increase or decrease the degree of certain annoying vasomotor and sensory phenomena at will, by merely smoking half of a mild cigar, or by abstaining; and when it is further pointed out that even prolonged abstinence from smoking failed to free him from his toxic and gastric phenomena, the theory that we may have to deal with a case or cases of tobacco sensitization can be rejected with certainty.

The influence of the liver on blood coagulation is of interest to the internist as well as to the surgeon, and the functional importance of bile for the well-being of the human economy is not to be underrated.

Without entering into the problems of mechanical obstruction to the flow of bile, produced by growths or infective processes; without doing more than cataloging the objective phenomena of icterus and ascites in relation to liver disease; and, finally, without more than mention of the many problems presented by cholelithiasis, which are of tremendous interest to all practitioners of medicine not limiting their work to special organs or affections, we revert to the pathology of hepatitis as the condition we most often confront.

As the word implies, we have to deal with inflammation of the liver, and this process does not materially differ from inflammation elsewhere in the body; that is, we can observe in the inflamed liver the entire gamut from local engorgement—circulatory stasis—exudative and transudative activities to connective tissue proliferation, cicatrization, and, finally, necrosis of tissue.

With this in mind, we need only point out that even the direct surgical injection of such preparations as fibrolysin, creosote in oil, and similar preparations into scar tissue, has failed to produce noticeable changes except after repeated and intense injections, and that there is no known drug that can influence fibrosis. There is nothing in the animal, vegetable or mineral kingdom that, taken by mouth, can influence diseased liver cells—in other words, drug therapy in disease of the liver is virtually useless.

On purely theoretic grounds, we are justified in investigating to what extent diathermy can prove useful in affections of the biliary apparatus.

The Function of Diathermy

We are familiar with the effective results obtained by diathermy in inflammatory affections elsewhere in the body, and we also know its definite physiologic influence on perverted metabolism. These favorable effects have, naturally, suggested to us to extend the application of this physical agent to nonmalignant, inflammatory processes of the liver, gall-bladder and bile ducts.

Although conversive heat by high frequency currents has stood the test of criticism as a scientific and effective modality, we proceeded very cautiously at first, until by repeated experiences in a number of selected cases we became clinically convinced that we were obtaining satisfactory results. These results were compared with animal experiments, which will be published in detail at some later date.

We know that the action of medical diathermy within tissue structure is primarily a production of local pyrexia. The current of tremendous high-frequency, when accompanied by the proper high voltage or pressure, produces, by virtue of the intracellular friction of the energy and the resistance of the tissues, a measurable and definite amount of heat within the tissue substance —a transformation of electric energy into caloric energy. By reflex action, because the heat acts as a foreign invasion, the circulation is markedly increased both locally and distally, producing a flooding of the organ by heated and freshly oxygenated blood and lymph. Just as general pyrexia in any febrile condition activates the phagocytic and defensive bodies so also does local pyrexia, irrespective of whether it be due to internal or external causes.

Stasis is reduced by an increased circulation. The fibrosis is reduced or retarded when constantly bathed in a hot and active circulation. Absorption of toxins and the removal of waste products always follows an active circulation. Distant as well as adjacent structures and organs are equally benefited by the hyperactive and heated circulation. The endocrine chain as well as the circulatory and

neural systems are proportionately benefited. Elimination is increased by the measurable respiratory exchanges as well as by the other excretory organs. The skin becomes warm and moist, while pain is relieved, due to the sedative action of heat upon the irritated nerve endings. In some instances the varying degrees of heat may very effectively destroy dormant bacteria. Accordingly, we have in diathermy a potential physiologic modality, that allows a truly scientific explanation and logical application in the affections under consideration.

Ascites

Alcohol is one of the chief etiologic factors in the production of the cirrhotic liver, followed by changes of the portal circulation and thence by the distressing condition of ascites. The condition of portal obstruction without collateral circulation assures us that we are dealing with a condition of hepatic cirrhosis, because of the ever-present fluid in the abdomen. In the early stages of this disease one often will mistake this condition for ordinary catarrhal gastritis because of the unrevealed abdominal fluid. The presence of an enlarged, tender liver and a history of chronic alcoholic indiscretion definitely inform us of the fact that we are dealing with an incipient cirrhosis of the hypertrophic type.

The ascites is the most distressing complaint of the patient. Paracentesis is the orthodox method for relief of this condition, but is often accompanied by pain and a variable amount of shock to the system and the reaccumulation of fluid. Unless compensatory circulation develops by way of the accessory portal system, which unites with the epigastric and mammary venous systems, the progressive morbid changes result in death.

When one recalls with what gratifying ease an edematous hand or foot is reduced to normal size by diathermy, the idea suggests itself that ascites may also be relieved or reduced by the same method. Moreover, when one further recalls the fact that diathermy has absorptive powers, i. e., that it removes transudative serum by way of a hyperactive vasodilated circulation, one feels that by diathermizing an ascitic abdomen one may obtain greater effect than by paracentesis.

Cases of ascites thus treated by me have shown decided improvement both locally and generally. The increased heat dilates the vascular system. The fluid is carried off by osmosis by virtue of an overactive circulation. Stasis is relieved, for it cannot exist in the presence of a physiologically engorged, active circulation. Irritants and toxins are swept off by this active circulation and the entire body is benefited generally.

The heated blood, sweeping through the alveolar lung substance and the heart muscle, benefits both of these organs, so that the heart tones become more regular and normal, while the respiratory exchange shows an increased CO_2 output and an increase of nitrogen and phosphates in the urine. At the same time, sphygmomanometer readings indicate a temporary fall in blood pressure in the hypertensive types, and, contrarily, low-tension types show temporary but decided rise in pressure. These phenomena are explainable by the fact that venous congestion is relieved through the marked activity of the arterial circulation. Visceral congestion is relieved. The liver, the intestines, and other organs within the abdominal cavity are made to disgorge the stagnant pools of blood which choke their structures. When the action of the diathermic current has subsided and the blood stream returns to its normal channels, freshly oxygenated blood enters in great abundance into the previously anemic or venously congested areas. The parts are also placed in a state of better defense against the invasion of toxins and bacteria.

Our experience in the treatment of ascites has been most effective when sedative technic was employed. The purpose of extreme sedation, according to Sampson, permits a greater volume of blood to flood the venously congested and anemic organ without arousing the reflexes to carry off the freshly heated blood supply. Relatively small milliamperage has been used when diathermizing liver structure for the reason that, because of its greater density, less milliamperage is required to heat the structure. Furthermore, to assure depth of penetration with small heat effect, the Oudin bipolar technic, alternated with 800-1000 milliampere D'Arsonval, is the method of choice.

In spite of the apparent benefits, we cannot believe that regeneration can completely take place when cell structures have been completely destroyed. It is apparent, however, that degenerative changes can at least be arrested and partial metabolism salvaged from the pro-

gressively destructive process, ensuring comfort to the patient.

Icterus

Chief amongst the factors that influence jaundice are the various irritants or toxins that produce inflammatory swelling of the terminal portions of the common bile duct. Osler recognizes Murchison's classification, which is (1) obstruction by foreign bodies within the ducts, as gall-stones and parasites; (2) inflammatory tumefaction of the duodenum or of the lining membrane of the duct; (3) by stricture or obliteration of the duct; (4) by tumor closing the orifice of the duct or growing in its interior; (5) by pressure on the duct from growths of the stomach, liver, pancreas, kidney or omentum.

Here, bipolar diathermia is a valuable adjunct. It must be given sedatively at first and with fairly low amperage. Because of the absorptive qualities of diathermia the sudden and rapid elimination of cholic toxins and bile into the general circulation often produces symptoms of intoxication. Furthermore, the diathermized liver and gall-bladder do not need high amperage because of their comparatively dense structures.

It has been our experience that relatively low heat with bipolar diathermia is a valuable adjunct in the first three classifications enumerated by Murchison. The last two, dealing with neoplastic obstruction, fall clearly within the realm of surgery. We have found that sedative therapy must be observed in order to obtain both immediate and lasting results.

Comparatively low amperage and deep penetration by high voltage are important factors in the treatment of this condition. A milliamperage over 800-1000 produces great heat discomfort over the liver region and tenderness and pain over the gall-bladder. This is explained by the dense liver structure, like bony structure, offering greater resistance to the penetrating current, and therefore requiring less volume to heat the organ. The tenderness over the gall-bladder is due to the greater blood volume within the gall-bladder region, producing increased biliary tension in an already chronically distended or plugged up common bile duct.

Decongestive action of heat penetration is nowhere more dramatically demonstrated than in jaundice. Improvement by diathermia has been rapid when a low amperage and a sedative technic is employed. Inflammatory tumefaction is definitely relieved by virtue of a hyperactive circulation which throws the toxins and waste products into the greater circulation. In the presence of local pyrexia and active circulation, stasis, congestion, irritation and the formation of biliary calculi cannot take place.

From what has been said, it can be readily seen that we have in diathermy a physical agent, which, theoretically as well as practically, must appeal to all unbiased observers as one of the important means for favorably influencing biliary inflammation.

It must not be forgotten, however, that diathermy is not a specific or panacea for all biliary troubles. Surgery has its well-defined indications, and internal medicine, with a suitable dietetic and hygienic regime, finds a large field of usefulness.

Cooperation between the surgeon, the internist and the physiotherapist will enhance the therapeutic results in many affections of the biliary apparatus which have in the past proved a source of worry and dissatisfaction to both patient and physician.

30 North Michigan Avenue.

Thyroid Instability

An Instance of Its Familial Occurrence

By H. J. ACHARD, M.D., Glendale, California

Managing Editor, *The Endocrine Survey*

THE fact that cases of thyroid disturbance, either hyperthyroidism (exophthalmic goiter, thyroid toxicosis) or hypothyroidism (myxedema, cretinism), frequently are observed in several members of the same family is not surprising. It is evident that such a familial dysthyroidism cannot be attributed offhand to hereditary influences, but that environmental factors enter very largely. Nevertheless, heredity is of importance in many instances, and we know in the case of cretins, for example, that the thyroid defect tends to recur in a family even in a locality where only a few of the community are affected. In other words, the conditions of environment, such as the absence of even a trace of iodine in the drinking water, for instance, may not be active, and the general circumstances may not conduce to the occurrence of endemic goiter.

If then the familial recurrence of the trouble is observed, it is clearly based upon heredity. On the other hand, in goiter countries, in districts where struma is endemic, the hereditary factor is only an incidental one although not without importance. That heredity actually plays a rôle in the etiology of goiter is postulated by Crotti for Graves' disease; by Hertzler, McCarrison, and others for myxedema; by Levi and Rothschild, for both hyper- and hypothyroidism. Hertzler refers to instances where three or more sisters became goitrous long years after each had left the parental roof. He also mentions a family type: that in which all members affected become so at the same age; sometimes early, say, below the age of 15, sometimes later, after the age of 30.

The hereditary influence is not limited directly to the dysthyroidism, but may involve other factors that are associated with subnormal functioning of the thyroids. So, in the *forme fruste* type of goiter, where, according to Hertzler, the neurotic substratum which characterizes the type, is very obvious. In fact, frequently some members will have the nervous manifestations without any symptoms that can be ascribed to a thyroid disturbance. These usually suffer from ovarian dysfunction. Incidentally, we may recall that ovarian dysfunction is very often closely associated with hypothyroidism.

McCarrison points out that there is no more constant feature in the history of subthyroidic persons than that of subthyroidic family history. The operation, through generations, of influences which tend ultimately to depress the thyroid function, leads to the evolution of a type of thyroidal cells of low functioning resources. This congenital debility of the thyroid is a factor of the first importance in the genesis of its disorders. The question has been studied at some length by Pierre Vallery-Radot,[1] whose doctor dissertation is a clinical study of familial and hereditary dysthyroidism. This author prefers the designation "dysthyroidism" to that of "thyroid dysfunction" or to the differential terms, "hyper-" or "hypothyroidism". He believes that, in certain cases, there are symptoms indicating at the same time an excess and a deficiency in the thyroid secretion. The same idea is carried out by Prof. Léopold-Lévi and Dr. H. de Rothschild,[2] who say that different combinations of myxedema and hyperthyroidism may be observed and often are transmitted from mother to daughter.

Lévi and Rothschild designate this irregularity of thyroid function as "thyroid instability," and they include in it the minor signs of hypothyroidism which are not sufficiently marked to be called myxedema.

Hypo- and Hyperthyroidism Combined

The combination of hypothyroidism and hyperthyroidism in the same person is illustrated excellently in a series of case histories that form the subject of another doctor dissertation. The author, M. Dameuve,[3] gives the histories of six sisters (from 50 to 64 years of age) and of the daughter of one of them (a married woman 19 years old) who, by the way, was the product of the only gestation that had occurred among all six sisters, although several of them were married. In these seven women, evidences of thyroid instability were observed ranging from almost pure myxedema, through various degrees of association of hypo- and hyperthyroidism, to

almost uncomplicated hyperthyroidism. In several of the women, ovarian dysfunction was present also.

The six sisters were the daughters of a woman who had died at the age of eighty-five, having preserved a remarkable degree of youthfulness, both physical and mental, until the last years of life. She had borne ten children, eight daughters and two sons. One of the sons died, at the age of nineteen, of lung disease aggravated by a brutal fright; the other, at the age of two, of diphtheria. Of the eight daughters, one died upon reaching puberty, and another died fifteen hours after birth, having been born with cleft palate, harelip, and polydactylism of both hands and feet. The other six daughters are the subject of the study. The father, who died at the age of eighty-two, was subject to attacks of fury in which he smashed things indiscriminately and treated his wife and children brutally; he was an alcoholic; but he also was far more youthful in his appearance and in his character than his years led one to expect.

Case Reports

Case 1: M. C., 53 years old; suffered from subacute arthritis and showed myxedematous instability of the thyroid. There was a history of rheumatism at the menopause, and of migraine from an early age; she was subject to emotional upsets and to irritability. She is the only one of the six sisters who bore a child. There were signs of myxedema, namely, generalized puffiness of the face, marked chilliness and fatigue, obstinate constipation, slowness of movements and of ideas, also slowness in speech, accompanied by a degree of somnolence. The outer third of the eyebrows was hairless and the lashes also had fallen out.

At the same time, there existed symptoms suggesting hyperthyroidism; namely, the glistening eyes, the fact that the hair of the head was preserved in quantity and in color, a pulse-rate of ninety-two, and the fact that the patient was emotional and irritable.

It is on this soil of thyroid instability that the two complaints which French clinicians, especially, have associated with endocrine dysfunction, namely migraine and subacute rheumatism, originated. In this patient, the migraine commenced at an early age (13) and it is a peculiar fact that it disappeared during the pregnancy which occurred when the patient was thirty-three years old. During this pregnancy, the ovaries were removed because of cyst formation. The patient was severely troubled by articular rheumatism, which had caused marked deformities of the joints.

Psychically the woman was evidently influenced by the hypothyroid factor of her make-up. She spoke in a whining tone of voice; ideation and speech were slow; she often interrupted her talk in order to complain of her fate. She wept easily, and was convinced that she was seriously ill and would never get well. She also complained of loss of memory. She had attacks of terror, especially at nightfall. As already stated, she was emotional and irritable. She slept badly and got up frequently during the night. During the day, however, there was marked somnolence.

Thyroid treatment was ordered, in doses of 1½ grains, four times a week. This dosage was persisted in, although, at first, palpitation was complained of, followed by a free flow from the nostrils, which was entirely foreign to the patient. Gradually, the puffiness of the face diminished as did also the chilliness. In fact, the patient became definitely warmer and even had occasional flushes of heat. The thyroid medication was increased to as much as 1½ grains seven times a week. Her appetite greatly improved, the attacks of fever lessened; she became stronger, slept through the night and was less somnolent during the day. The eyebrows were fully restored, especially the outer third, and the lashes grew out again. The hair, which had commenced to fall out, regained its normal condition.

The dose of thyroid substance was increased to ten doses of 1½ grains each during the week. After having taken about two hundred doses of thyroid substance, the patient omitted the treatment and immediately found that the rheumatic pains returned. On resuming the medication, marked improvement again followed and she was left on a regime which included one dose one day and two doses the next, alternately, with one day of rest each week.

This case is cited rather fully because it shows one extreme of the conditions under discussion. It is of interest that the migraine ceased throughout the pregnancy. This fact evidently is explained by a process of autotherapy by which an increased functioning of the thyroid gland was induced by the pregnancy as is usual*. The suspen-

* Recently, I read an article in which the assertion was made that, contrary to current opinion, gestation functioning of the thyroid. (See *The Endocrine Survey*, July, 1925, ii, p. 262.)

sion of ovarian function, or perhaps the involvement of other endocrine processes during pregnancy, often causes certain affections to be improved. For instance, I was told, recently, of a young woman who was quite free from her asthma during her two pregnancies.

The rheumatism was congestive, polyarticular, and deformant. Its relation to the thyroid was shown definitely by its disappearance under thyroid treatment. The same is true for the other symptoms of hypothyroidism, physical as well as psychic.

Case 2: J. C., 64 years old, unmarried. Suffered from pain in knees and swollen ankles. In this patient, the symptoms of hypothyroidism were manifested by subpalpebral edema, where the skin was white and cold. During the examination, the left side of the face became flushed and warm. The skin on the face and on other parts was wrinkled. The eyebrows were but slightly developed, the patient complained of cold feet. There was a history of continuous fatigue, existing since childhood, and being especially marked in the morning. There was constipation and loss of memory.

The signs of hyperthyroidism were: a tendency to slenderness, the patient having taken on weight only temporarily during the menopause; congestive flushes of the face, with swelling, making the skin appear warm and pink; attacks of diarrhea, which occurred at the beginning of thyroid treatment; frequent loss of consciousness; irritability and emotional upsets. Since her tenth year, this patient suffered from migraine, which disappeared only at the menopause. The attacks invariably terminated with a loss of consciousness—fainting. In this patient, also, there was rheumatism with crepitation in the joints, although the affliction was not so severe as in Case No. 1. It is of interest to mention that puberty was established very late (at 18 years) and that the menopause started prematurely, at 40. At the time of observation, in her sixty-fourth year, the patient's hair was still black and there was a certain appearance of juvenility, which was characteristic of her mother, and which is present also in cases 4, 5, and 6. It was noted that the hairline was higher than ordinary, especially in the temporofrontal region. This irregularity in the growth of hair suggests a thyroidal disequilibrium.

The patient responded to thyroid therapy, at first by hyperthyroid reactions (malaise and diarrhea) which gradually diminished and disappeared, in course of time giving place to improvement of appetite and general condition, lessening of pain, and an increased activity. In this particular patient, it was necessary to keep within very small doses of thyroid in order to avoid toxic symptoms.

Case 3: Josephine C., 62 years old, unmarried, the only one of the six sisters who has gray hair. In this patient, the outstanding feature is ovarian insufficiency. Menstruation commenced at 17. The periods were short, scant, and painful. The menopause was premature, at the age of 30.

Here, too, there was an associated hypo- and hyperthyroidism. Of the hypothyroid features, there were: subpalpebral edema; myalgia and rachialgia; gums retracted from the teeth, which were loose; chilliness, especially of the feet and hands; fatigue in the morning.

Indicating hyperthyroidism there were: hypertrichosis of the eyebrows and premature grayness; brittle finger nails; persistent diarrhea; dizziness, with loss of consciousness; frequent attacks of sneezing; pulse-rate of 88; an impressionable nature. This patient also complained of rheumatism, but there is no migraine in her history.

Case 4: A. C., 60 years old, unmarried. This lady came to be examined at the doctor's request and did not complain of any symptoms of illness; nevertheless, certain signs of hypothyroidism were present; namely, chilliness, especially of the feet; fatigue in the morning; and constipation. With these were associated signs of hyperthyroidism; namely, a tendency to lose weight under the influence of emotion; vertigo with loss of consciousness; and an emotional temperament. Like her sister (Case No. 3), this woman appeared to be very much younger than her years. In both, the face appeared young, the complexion good, the skin soft and free from wrinkles.

Case 5: M. C., 56 years old, married. in point of age, she was closest to her sister, M. C. (Case No. 1), to whom, however, she formed a sharp contrast inasmuch as the hypothyroid signs were very much less emphasized, while those of hyperthyroidism preponderated. Signs of hypothyroidism were: Heberden's nodes; crepitation in the joints; fatigue; and loss of memory. Signs of hyperthyroidism were: sensations of heat; abundant perspiration; a pulse-rate of 96; thyroid hyperplasia; trembling under the influence of emotion;

attacks of anxiety; glistening eyes; and restless sleep. Like her sisters, this patient had rheumatic pains. She had migraine during the years of menstruation, that is, from 13 to 48. Her mucous membranes were easily congested and overactive, a symptom which is controlled by thyroid medication. The patient was extremely sensitive to this treatment and could tolerate only very small doses of thyroid substance which, however, brought about distinct improvement. While she did well on 1/32 grain of thyroid substance taken four times during the week, she showed symptoms of thyroid irritation on double that dose.*

Case 6: G. C., 50 years old, married. She was the youngest of the six sisters, and manifested a hyperthyroid temperament without, however, showing any indications of hyperthyroidism. The patient's health was robust; she was never tired; her functions were perfect; there was no migraine; no pain of any kind; but there was a relative tachycardia (90) and she was quite irritable and nervous. She complained of hot flushes and the eyes were slightly protruding. She wanted to be constantly occupied; in short, she was one of those intense persons who manifest the driving force of a full thyroid function.

It is this hyperthyroid temperament (not hyperthyroidism) which is responsible for the persistent youthfulness (*juvénilité persistante*, of Léopold-Lévi) of some people and which is manifest in four out of the six cases considered so far.

Case 7: P. K., 19 years old, married, daughter of Case 1. In this young woman there was an ovarian insufficiency combined with thyroid instability.

The signs of hypothyroidism were: decided plumpness; slight infiltration of the face, especially the nose; puffing of the eyelids; loss of hair; obstinate constipation.

Signs of hyperthyroidism in this young woman were: complaint of being too warm; glistening eyes; brittle finger nails; excessive perspiration; pulse-rate 88; an intense emotional nature; somnambulism. The ovarian irregularity seemed to have been transmitted by the mother. It is interesting to note that very marked improvement in all respects followed administration of thyroid substance in ¼-grain doses three times a week.

* [Occasionally patients are encountered in whom the dosage of thyroid has to be regulated with minute exactness, since even as small a dose as 1/32 grain may be too great and produce irritation. In patients who show this peculiar combination of hyper- and hypothyroidism, the dosage of thyroid substance has to be adjusted with special care and in them we believe the precaution of the French authors to be wise, namely, to order one day's rest from medication during the week.—Ed.]

Discussion of Symptoms and Treatment

Of interest in this study is the fact that the author has deliberately limited his investigations to clinical methods of study, doing without those laboratory examinations that can add so greatly to our understanding of a case and which often facilitate a diagnosis. The author's purpose was, to show that the practitioner of medicine is capable of understanding, and competent to undertake a scientific investigation, even unaided by laboratory help. In this purpose he succeeded admirably.

Although, at the present day, there is hardly any necessity to refrain from at least some of the laboratory investigations that are justly considered essential, it is interesting to find that a careful and correct clinical investigation is possible without them, and, further, that such a clinical investigation can produce a notable contribution to scientific medicine.

There are several interesting points in this study, for instance, the familial occurrence of thyroid instability of all degrees, and the association of the thyroid instabilty with a surprising youthfulness, physically and mentally. It is evident that both parents of the six sisters bestowed their peculiar tendency to thyroid disorder upon their daughters and that this heredity was passed on further, through one of the daughters to her only child.

In one case (No. 6), in which the thyroid instability was extremely slight, the author does not designate it as dysthyroidism, but rather as a simple hyperthyroid temperament, using the term "temperament" designedly because of its expressiveness.

While, in all seven patients studied, the thyroid peculiarities formed the outstanding characteristic, attention must be directed to the ovarian feature, which is quite clear in some of the case histories, occurring in four out of the seven patients in whom there were evidences of ovarian dysfunction. In Case No. 3, the marked ovarian hypofunction expressed itself in the greatly reduced duration of the sexual life, since puberty was not established until the age of 17 and the menopause commenced at the age of 30. There was much dysmenorrhea, the menses being very scant and

extremely painful. Ordinarily, they terminated by causing loss of consciousness. It is a frequent observation that an early menopause follows upon the late establishment of menstrual activity. The same thing, although less sharply accentuated, was observed in Case No. 2, where, however, the menopause did not appear until the age of 40. Here also the degree of amenorrhea suffered by the patient in Case No. 3 was replaced by a decided menorrhagia. In cases Nos. 1 and 7 (mother and daughter) the ovarian irregularity expressed itself in delayed menses in which, moreover, the flow was scant in amount.

In the case of the daughter, especially, an illustration is afforded of the close relation between thyroid and ovary, since the administration of thyroid substance was followed promptly by regulation of the menstrual periods. When this treatment was omitted, the menstruation failed to appear until the thyroid treatment was again enforced.

As to the nature of the interrelation between thyroid and ovary, opinions differ. Dameuve points out that Parhon and Goldstein believe it to be an antagonism; while Charrin and Jardry, on the contrary, maintain that there is a close synergism. While pointing out that opposing thyroid affections, exophthalmic goiter and myxedema, may bring about the same disturbances in the ovarian function, Dameuve insists that there is undoubtedly a true thyro-ovarian synergism.

Therapeutic Observations

A study of any kind whatever remains useless unless it is productive of definite practical suggestions. The observations concerning the results of thyroid therapy in the seven patients under consideration are highly instructive.

The improvement and, often, the disappearance of troubles due to hypothyroidism are self-evident. Among these troubles, however, there are some disturbances that are not exclusively of thyroid origin. Such a one is constipation, an affection that is very prevalent and often peculiarly intractable. It is evident that the discovery of dysthyroidism often will make it possible to benefit the constipation by means of thyroid therapy. Moreover, the effect of this treatment may be so striking as to assume diagnostic significance. In several cases, the immediate amelioration of the constipation served to confirm the diagnosis of dysthyroidism.

Another instance is the rheumatic factor, the relation of which to dysthyroidism was proved by its prompt disappearance under thyroid therapy, as has been reported already by Lévi and Rothschild.

Migraine was clearly due to hypothyroidism in these patients since it always yielded to suitable thyroid feeding.

Surprisingly enough, the consequences of hypothyroidism were not alone in yielding to thyroid treatment, but several of the hyperthyroid manifestations were markedly improved and even relieved; for instance, the diarrhea, perspiration, flushes of heat, etc.

There is evident, in this respect, a regulating effect of thyroid therapy which may ameliorate signs of opposing thyroid dysfunction—an apparently paradoxical action. Yet, it is readily explained if it is realized that there are remedies, the tendency of which is to restore normal conditions from both excess and insufficiency of function. However, it must not be forgotten that, unless the dosage of thyroid therapy is regulated with great care, the consequences of hyperthyroidism are, not only, not relieved but may become greatly aggravated. In every case, the dosage must be established with exact reference to the individual susceptibility and responsiveness of the patient.

Since the possibility of coexisting hypo- and hyperthyroidism was called to my attention, cases have been noted occasionally in which the same association seemed to exist. I have in mind, for instance, a young woman who is now being studied and concerning whom it would be premature to give a definite history. Of present interest are a few facts, however, which may be noted briefly: The lady is 28 years old, has been married ten years without ever having been pregnant. She is very short and stout, the obesity affecting the entire body. Especially are the arms and legs surprisingly large for so short a person, but the fat is soft and flabby. The patient complains of always being very tired.

With the signs of hypothyroidism, the great animation shown by the lady in contact with her friends stands in sharp contrast. The energy displayed by her in her household duties, her unfailing good-nature and her enterprise are surprising. She has engaged in a small business

venture, because her household duties were not sufficient to occupy her time, although her husband's income is sufficient to make the additional earnings of no moment. Barring the pronounced plumpness, the lady's appearance is that of a little "flapper", say, of eighteen or twenty. So is her cheery conversation, her love of fun, her engaging liveliness—in short, the whole complex of surprising youthfulness.

The outcome of the detailed study of this case will be watched with interest and the results will be published on a later occasion.

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Stomatology and Dietetics*

By ALFRED J. ASGIS, Sc.B., D.D.S., New York City

Clinical Professor of Stomatology, New York Polyclinic Medical School and Hospital; Chief, Pyorrhea Clinic, and Associate in Surgical Periodontia, Stomatological Division, Midtown Hospital.

STOMATOLOGY is finding its place among the specialties of medicine. The time is not far distant when dentistry will expand to such a degree that the dentist will qualify first as a medical practitioner and then specialize in stomatology. The dentist will then extend his energies to a larger field, embracing the prevention and treatment of diseases not only of the teeth but of the mouth as a whole. For, with the increase of our knowledge, we come to appreciate the fundamental fact that there can be no health of the body, at least not for a long period, as long as there is no health of the mouth; and that there can be no health of the mouth as long as there is a systemic disturbance present.

The clinical facts, both from medical and dental practice, will bear evidence to this fundamental tenet of stomatology. It is for this reason that the younger men in the profession must be cognizant of the newer doctrines. The young men are the hope of our profession and it is to them that both the medical profession and the public are looking for assistance in the solution of some perplexing dental problems.

Let us consider, first, the outstanding facts regarding dental infections—for instance, nerve devitalization—which can be prevented by the mere refusal of dentists to perform such operations.

Crowns and Bridges

In the last decade, gold shell crowns and large fixed bridges were recognized as a menace to health. Such bridges have been shown to be conducive to insanitary mouth conditions and serve as chronic foci of infection. In many instances, pyorrhea has resulted in teeth which were used as abutments for bridgework. Very few teeth with gold shell crowns remain vital after a lapse of time, and the patient is not aware of having an infected tooth in his mouth. While it is essential to replace lost teeth, in order to restore proper mastication, only such restorations should be used as will not interfere with mouth hygiene and which will not injure the adjacent teeth. Small fillings, gold inlays, removable bridges and partial plates are within the reach of all and are, at the same time, sanitary. Insanitary dental work in the mouth is better left undone.

Another equally dangerous but avoidable dental practice is pulp-devitalization. Usually the public postpones dental treatment and care until forced by pain to resort to it. Then it is too late, for the pulp of the tooth has been attacked and is probably slowly dying. The sufferer then asks to have the nerve "killed" and the roots filled in order to stop further pain and decay. Here is where the trouble commences. Although the patient may be relieved of the pain, he is still subject to the danger of further infection developing at the apex of the "filled" root canal. No matter how carefully this operation has been performed, it has been proven that the roots are never free from infection.

Apical infection may be due to several factors: (1) it is impossible to remove all of the dead pulp; (2) it is difficult and next to impossible to sterilize root canals; and (3) the current methods of

*Address of the President of the New York Stomatological Society, delivered at its Annual Meeting in cooperation with the Allied Dental Council, New York City, June, 1924.

root-canal therapy do not guarantee against the possibility of reinfection. The usual result is the formation of a chronic or an acute abscess. Some abscesses cause swelling which serves as an indication of the presence of pus; other abscesses, however, do not give rise to swelling, because they empty the toxins into the system, thus causing chronic infection. This latter process may go on for many years, slowly poisoning the system, before it is detected and the cause removed.

Whether the dentist takes the stand of the conservative, and holds that as long as he has saved the teeth for the patient for purposes of mastication, or whether he holds with the progressive men, who eliminate all possible oral foci of infection, even though it may necessitate the removal of several dead teeth, all conscientious operators know, and will unquestionably admit, that there is an urgent need of devising some preventive measure which will aid in maintaining pulp vitality.

The fact of the matter is that no procedure in treating pulpless teeth is safe. With the methods at our command, today, it is impossible to sterilize infected pulp canals. Their many ramifications, with their countless dental tubuli, permeated with infection, render it impossible to hermetically seal such treated canals and prevent reinfection. The apparent success in "treating" dead teeth is due to some local or general resistance of the patient, and not to the skill or technic of the dentist.

Prophylactic vs. Reparative Dentistry

Why then do dentists not direct their energies toward the prophylactic and more positive methods of practice? For the answer we may look to the economic phase of dentistry. In a recent questionnaire sent out to local dentists, I asked for the following information:

1.—What is the percentage of income in your dental office from restorative work?

2.—From prophylactic work?

3.—Is prophylactic dentistry more beneficial to your patients than reparative dentistry?

4.—Why is prophylactic dentistry less remunerative than reparative dentistry?

The answer to question 1 was that "the percentage of income varied from ninety percent to seventy-five percent". Some dentists replied to question 2 "ten percent" and others "loss". Almost all answered "yes" to question 3. The answer to question 4 was "lack of education and appreciation on the part of the public".

Although progressive dentists realize that preventive and prophylactic dentistry is of greater benefit to the public, they are economically bound to follow the practice of reparative dentistry. If we recall the recent report of Dr. Talbot that, due to economic pressure, more dentists leave the profession than enter it, it is time to pause and consider more seriously the public-health aspect of dentistry.

From statistics we gather that tooth decay and pyorrhea are on the increase. We know that only ninety percent of our population receives dental attention, and that there are not enough dentists to give the needed dental care, considering that the highest type of restorative work is not within reach of the public. Dentists are compelled to devote their practices to restorative dentistry, mainly, because of economic factors and, lastly, that more dentists leave the profession than enter it. How is the dental profession going to face the dilemma?

It is at this point that I wish to take up another aspect of stomatology; namely, the relationship between systemic health and mouth health.

It is the empirical attitude of the profession toward its practices and the failure to correlate scientifically those facts pertaining to problems of mouth physiology and pathology, that may in a measure be responsible for the present status of dentistry. The profession has not given due consideration to the medical aspects of diseases of the mouth. With the realization of this failure, a reaction in some quarters took place and attention was directed toward the prevention of caries and pyorrhea through various methods; one of these being the reform in diet.

Diet and Teeth

In his recent work on nutrition, Prof. E. V. McCollum speaks on "The Most Fundamental Problem in Preventive Dentistry", which he identifies with the question of satisfactory nutrition during the period of development. The lack of physical fitness, which was seen to lie in the universal prevalence of under-developed and feeble jaws, and inferior and decayed teeth, poorly developed nose and throat, adenoids, weak chests, and indigestion, he attributes to unfitness for motherhood, lack of essential knowledge on the part of parents, bottle-feeding in early infancy, defective hygiene

and too much pap-feeding of children. Prenatal life, infancy and early childhood are the critical periods in the development of the individual. Hence, the prevention of dental caries can be attained only by the building up of effective barriers of defense during this time of life.

Professor McCollum is very emphatic in his condemnation of the idea that medical and surgical treatment and dental prophylaxis are effective measures in preventive dentistry. The trouble runs deeper; it is a matter of food choice and calls for a radical change in the nation's diet.

Three principles are laid down for the formation of a satisfactory diet:

1.—Extension of the use of dairy products —at least a quart of milk per day per capita.

2.—Enlarged consumption of the leafy vegetables which are "protective foods" and also serve to keep the digestive tract in a hygienic condition.

3.—Use of a certain amount of raw vegetable food, because of its antiscorbutic properties.

If these simple principles are adhered to, the main features of an adequate diet will be fulfilled, and the remainder of the food supply may safely be derived from any of our ordinary milled cereal products, tubers, root vegetables, meats, etc.

Dr. Grieves, in discussing the effect of defective diets on teeth (*Dental Summary*, February, 1923), confirms the belief in the necessity in the diet for a proper "calcium-phosphorus-organic factor balance" as *most* important in the formation and maintenance of normal bones and teeth and health-attaching tissues.

Dr. Howe, in his researches on decalcification of teeth and bones and regeneration of bone through diet (*Dental Summary*, February, 1923), finds that calcium serves to regulate the equilibrium in almost any irregularity of the body mineral elements. Statistics and research indicate that the calcium requirement, particularly for children, is greater than was formerly believed. It is of interest to note that, when all the proper food factors are supplied, except the antiscorbutic, the animal organism still appears to withdraw calcium from the teeth and some parts of the bone. We can readily see the practical application of the principle; namely, the determination of calcium deficiency in a patient's diet. Such a patient should be recommended to follow a diet rich in calcium, which should include milk, eggs, butter, whole wheat bread, etc.

The pioneer work of Dr. J. Sim Wallace of England, in the prevention of dental caries through proper dietary reforms, is gradually being recognized by many agencies active in mouth hygiene. The following principles of dietary reform, advocated by Dr. Wallace, are incorporated in the educational literature issued by the Council of the Society of Medical Officers of Health. It reads as follows:

"Decay of teeth is caused by the fermentation of food that sticks in, or between, the teeth after meals. Acid is formed from the food, and this acid eats a hole into the teeth. It is only the 'starchy' and 'sugary' foods that form acid in the mouth."

1.—As soon as an infant needs food other than milk (8 to 9 months) give it in a solid form—such food as crusty bread, twice baked bread, or crisp toast—thus compelling mastication. Do not give bread soaked in milk or milk thickened with flour or other starchy foods, such as most patent foods. Encourage the child to chew and see that he breathes through his nose. In these ways good habits of mastication will be formed.

2.—As the child grows up you should still give most of the food in a solid form, compelling mastication. Food other than milk should rarely be taken in a liquid form. Vegetables and meat should not be minced and soaked in gravy. Fresh bread should not be eaten, and all bread should have plenty of good firm crust.

3.—After the first two or three years of life, the child should have three meals a day and no food should be taken between these meals.

4.—It is not advisable to drink at meal-times, but plenty of water should be taken between meals. Milk is a food and should only be taken at meal times, and it should be followed by a tooth-cleansing food.

5.—All meals should be finished with a cleansing food (see below).

6.—Sweets, chocolates, and biscuits, if taken the last thing at night, are very harmful to the teeth. They should be taken only at meal times, and should be followed by a cleansing food. The custom of giving milk and biscuits the last thing at night should not be allowed.

Examples of Food Referred to Above.

Starchy foods.—Potatoes, rice, tapioca, sago, bread, biscuits, etc., oatmeal porridge, most patent foods.

Sugary foods.—All foods to which sugar is added; sweets of all kinds, honey, syrup, jam, marmalade, milk.

Tooth-cleansing foods. — Fresh fruits, apples, oranges, nuts, raw vegetables, lettuce, watercress, celery, radishes, onions, crusts of bread, crisp toast, twice-baked bread, meat, and bacon.

From the following table[1] we can readily notice a decrease in dental caries as a result of the practical application of some of the dietary reforms advocated. It is a comparison of the inspection of 37,527 school children in the pre-war years 1910-1914 with the inspection of 10,593 school children in 1919 and the first three months of 1920.

	Age 5		Age 12-13	
Year	Number of carious teeth per child	Percentage free from caries	Number of carious teeth per child	Percentage free from caries
1910-14	6.4	5.0	4.6	2.9
1919 (last 3 months)	2.1	42.0	2.1	26.0
1920 (first 3 months)	1.9	48.0	2.1	28.3

The importance of proper dietary habits from early childhood and during adult life as a preventive measure against disease, and as a proper medium of maintaining bodily resistance, cannot be overestimated. The teeth will be best preserved from decay when, during their process of formation and development, they are supplied with the necessary calcium salts. Thus, defense against tooth decay must necessarily start in prenatal life and the expectant mother should therefore be careful with her diet and consume such foods as milk, butter, cheese, spinach, radishes, string beans, celery, raw and cooked vegetables, and other foods which are conducive to proper tooth and bone formation.

Proper Dietetic Habits

The child, in addition to being taught the need of proper care of the teeth and mouth, must also consume the proper foods and in their proper combination. Special care should be taken that not much free sugar is used, as it may cause digestive disturbances. Digestive disturbances in turn interfere with proper absorption and nutrition. Many authorities believe that free sugar is the chief cause of dental decay, and that, by the adoption of a balanced diet, which will provide for the elimination of free sugar and the necessary supply of calcium content, immunity from tooth decay will be established.

[1] Personal communication from Dr. J. Sim Wallace.

While these habits should be formed in childhood, they must be continued in adult life. Adults must maintain habits conducive to good health, such as exercise, proper food combinations, and general bodily cleanliness. An adequate diet must include extensive use of dairy products, at least a quart of milk a day per capita (milk is a food for which there is no effective substitute). A greater consumption of vegetables, which supply valuable nutrients, not obtainable from milled cereals, and of muscle meats, will also serve to keep the digestive tract in a hygienic condition. Raw vegetable food should be taken regularly because of its antiscorbutic properties.

No less important a factor in health is the combination of foods. Heavy starches, such as bread, potatoes, rice, lima beans, and other carbohydrate foods should not be eaten with heavy proteins at the same meal. Heavy proteins are meats, shell fish, eggs and cheese. Drink plenty of water between meals and at bedtime. Raw foods and raw fruits should be eaten daily. Eat slowly and chew your food well. Proper dietary habits will provide the teeth with a strong protective covering to aid in fighting off disease-producing germs in the mouth, thereby preventing decay and pyorrhea.

Not only can tooth decay be minimized through proper dietary regulation but, as has been shown by Dr. Eugene S. Talbot, many types of pyorrhea are caused by malnutrition. Dr. Stillman believes that a diet deficient in antiscorbutic vitamines seems capable of inaugurating a generalized gingival disease (Paul R. Stillman, "What Constitutes True Oral Prophylaxis", *Dental Cosmos*, May, 1923). With the cooperation of Doctors John L. Kelly and Rober H. Rose, I have been able to work out a stomatological system of charts as an aid in diagnosis. Each patient must not only have a roentgenographic examination, a physical diagnosis, but, in order to have his diagnosis complete, his diet must be recorded. Dietary examination is a part of the diagnosis carried out in the Department of Stomatology at the Midtown Hospital.

Other Prophylactic Factors

It must not be thought, however, that food alone, to the exclusion of other factors, will insure a healthy mouth. The last word in dietetics has not been said, and much is still subject to investigation. Periodic mouth examination, and home prophylaxis

by the patient are equally indispensable factors in stomatological practice.

The mouth and teeth should be examined at least six times a year in order that the stomatologist may locate small cavities and prevent the progress of decay. These prophylactic treatments aim to check tooth decay and pyorrhea and to help keep the mouth in a sound and healthy condition. They consist in the removal of tartar, food debris, bacterial colonies, and other irritating foreign material from the teeth.

Before commencing to follow out prophylactic treatments, it is necessary to have all teeth polished, all the dead roots and infected teeth extracted, cavities filled, and lost teeth replaced. Great precaution should be taken not to extract teeth unless it is absolutely necessary. In all cases, particularly where systemic disease is involved, the physician should be consulted.

An essential in keeping the mouth clean is to scrape the tongue twice daily. A coated tongue contains germs which may be harmful. The teeth should be cared for at least twice a day and the gums massaged in order to stimulate the circulation in the tissues. See that the materials for the care of your mouth are sterile. Cotton rolls are superior to tooth brushes for massaging the gums, since brushes may lacerate them. Individuals with sensitive or bleeding gums should especially avoid tooth brushes. Brushing the teeth, however, is not sufficient in any case; they should be polished at least once a week. You can polish your teeth with an orange wood point dipped in a dental powder. Visiting a dentist six times a year without the proper home care will not aid in the prevention of decay and pyorrhea.

In conclusion, I wish to emphasize the fact that those who look to diet as a panacea for all ills will find themselves disillusioned. This field is no less accessible to the charlatan, faddist and amateur than the other newly-explored fields. So, this may serve as a word of caution as well as a word of inspiration, and we must look to the science of nutrition as one of the many avenues of hope for the alleviation of human sufferings.

33 W. 42nd Street.

Chlorine Gas in Respiratory Diseases

The Simple and Economical Method of Administration

By ALFRED H. BRAECKLEIN, M. D., Baltimore, Md.

A GREAT deal of publicity has been given during the past year to the use of chlorine gas mixed with air in the treatment of common colds, influenza, whooping cough and other respiratory diseases, in which the infecting organisms are located on the surface of the mucous membranes of the respiratory passages.

This interest and publicity all followed the research investigations of Edward B. Vedder, M.D., Lt. Col. Medical Corps, United States Army, and Harold P. Sawyer, M.D., Capt. Medical Corps, United States Army, both connected with the Medical Research Department of the Chemical Warfare Service. They conducted extensive experiments at Edgewood Arsenal, Maryland, and reported on them in an article, entitled "Chlorine as a Therapeutic Agent in Certain Respiratory Diseases", in volume 82, pages 764-766 of the *Journal of the American Medical Association*, published March 8, 1924.

Colonel Vedder and Captain Sawyer reported on the treatment of 931 cases—71.4 percent of which were definitely cured, 23.4 percent improved, there being no change in 5.1 percent of the cases treated.

The investigations of Vedder and Sawyer were largely carried out in an air-tight chamber through which 42,000 litres of air mixed with chlorine were passed per minute, with an even distribution in the chamber.

They found that a concentration of 0.015 milligrams of chlorine per liter of air was the optimum concentration. Subsequent investigations have led them to the opinion that this is close to the maximum concentration of chlorine that should be used, finding that 0.017 milligrams of chlorine per liter of air causes irritation of the throat, while a concentration below 0.01 milligrams per liter was too low to be effective.

There seems to be little doubt that, with the concentration of chlorine within the limits specified, the treatment will com-

pletely cure a cold when taken sufficiently early and give great relief when used in well developed cases.

Acute bronchitis is practically always relieved and the treatment has a distinctively curative effect in whooping cough.

It is a relatively simple matter to introduce into a room enough chlorine to give a concentration of 0.015 milligrams per liter, which is approximately 146 cubic centimeters of chlorine per 1.000 cubic feet of room volume.

It is obvious, however, that from the instant that the chlorine is introduced into the room the concentration begins to decrease. Chlorine is absorbed by the walls, hangings and fittings of the room, the clothing, hair and bodies of the patients receiving the treatment. It is subject to wide variations, depending upon temperature and humidity and a great many other variables.

The problem is not to measure the amount of chlorine to initially introduce into a room to give the concentration required; the real problem is to make sure that the patient is inhaling the proper concentration during the entire treatment.

This fact became very apparent to Colonel Vedder and Captain Sawyer, following the work of independent investigators in an endeavor to check up the results given in the technical paper that has been mentioned.

They fully appreciate that the major problem is to maintain the concentration of the gas within the limits that they give, for otherwise satisfactory results can not be obtained.

The remarkable results of Vedder and Sawyer in the treatment of respiratory diseases with chlorine gas were secured in a constant flow chamber, at Edgewood Arsenal, where their experiments were conducted.

Fresh air entered the chamber constantly, and each portion of air had precisely the proper amount of chlorine to give the desired concentration of fifteen millionths of a Gram per liter.

My research work in this direction prompts me to state that, in order to use chlorine gas effectively as a therapeutic agent in the treatment of respiratory infections

1.—The patient must inhale the proper concentration during the entire treatment, if it is to be effective.

2.—The method of administering the gas, must be simple and economical.

Fig. 1. Inhalator with paper mask, to be held in the hand.

3.—Patient should not necessarily be confined to one room, but should be permitted to breathe pure, fresh air.

4.—The treatment must be perfectly safe and practical. An overdose due to the inad-

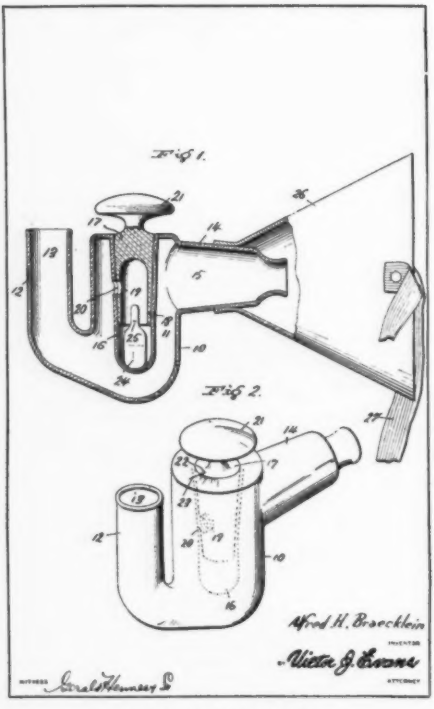
Fig. 2. Inhalator, with mask of rubber fabric, fastened in place by a tape, to permit patient to go on with her work.

Cases Treated with the Ideal Chlorine Inhalator, from September 4, 1924, to March 12, 1925. Results Obtained

Diagnosis	No Of Cases	Cured after 1 hour treatment	Cured after 2d hour treatment	Cured after 3d hour treatment	No Improvement
Coryza	84	82	2		
Acute Bronchitis	19	16	1	2	
Acute Laryngitis & Pharyngitis	14	11	3		
Chronic Bronchitis	4	0	1	1	2
Whooping cough	1	0	0	1	
Total	122				

vertent release of an excess of gas must be rendered impossible.

Having these facts in mind, my experiments were directed to designing and perfecting a simple and practical inhaler, that will duplicate, for individual treatment, the conditions that existed in the constant flow chamber, and maintain the exact concentration required throughout the hour or more of treatment.



DETAIL OF INHALATOR

10.—Casing (preferably of glass).
11.—Mixing Chamber.
12 and 13—Fresh air inlet.
14 and 15.—Air and chlorine outlet (to patient).
16.—Chlorine container.
17.—Regulating plug (ground to fit container).
18.—Skirt of plug.
19 and 20.—Holes in plug and container for escape of chlorine gas.
21.—Operating knob.
22.—Indicator, for adjusting flow of chlorine gas.
23.—Graduated scale for setting indicator.
24 and 25.—Ampule of liquid chlorine.
26.—Face mask.

In the use of this instrument, which I have called the Ideal Chlorine Inhalator, an ampule of liquid chlorine gas containing a measured dose is placed within the container, and the mask arranged in position, the closure being positioned to allow the proper amount of the gas to pass from the container into the breathing chamber.

When the index, 0.015, registers with a mark on the Inhalator, the proper amount of gas escapes, and provides an 0.015 mg. per liter concentration at every inhalation of the patient during the hour or more of treatment.

The patient may thus walk about the house or into the air while under treatment and if desired may attend to his or her duties.

By inserting a measured dose in the container, the patient receives only the proper amount at each treatment and this amount is mixed with pure, fresh air instead of closely confined air with a number of patients in a single room.

The many disadvantages of the chlorine treatment now in vogue seem to be overcome by this instrument, in which the chlorine gas, in measured quantities, is mixed with air and administered so that the patient receives a definite amount at each treatment. He receives it in regulated quantities without being confined within a closed room, so that the air mixed with the gas will be fresh instead of air breathed by a number of patients simultaneously receiving treatment, as is the case with the method of treatment now in vogue.

Most of these patients received a single treatment of one hour, a few received a second or even a third treatment, and two a fourth treatment on succeeding days. The single case of whooping cough was completely cured after the 3rd one-hour treatment.

Conclusions

1.—Inhalations of chlorine of a concentration of 0.015 mg. per liter, for one or more hours, have a distinctly curative value in coryza, acute bronchitis, acute laryngitis, pharyngitis, chronic bronchitis, and whooping cough, provided, however, that the concentration of 0.015 is maintained at every inhalation.

2.—The small percentage of unfavorable reports, as to the curative value of chlorine gas in acute respiratory infections, can in most cases be readily shown to be due to the fact that the treatment was not properly administered and the curative concentration of 0.015 was not maintained at every inhalation of the patient.

Typhoid Leads to Oyster Sanitation

By ISAAC D. RAWLINGS, M. S., M. D., Springfield, Illinois
Director, Illinois Department of Public Health

OYSTERS as an important medium for spreading typhoid fever first attracted the serious attention of Illinois State health authorities in 1915. During November and December of that year, a typhoid fever epidemic, involving about a dozen cases in Champaign and an equal number in the surrounding territory, was traced rather definitely to oysters. It appears, from records now on file with the State Department of Public Health, that the contaminated oysters came from Tilghman's Island, which is located in Chesapeake Bay, off the Maryland shores. At that point nine cases of typhoid fever had occured among oyster shuckers during a period of time that fitted in exactly with epidemiological evidence collected in Illinois and other states relating to specific outbreaks of typhoid fever.

Then, as now, the large oyster distributors bought and sold oysters from a number of different sources, while the wholesale and retail dealers bought oysters from a number of different distributors. It is significant, therefore, that the epidemiological evidence resulting from an investigation into the Champaign typhoid fever epidemic was clear enough to justify the conclusion that raw oysters had carried the disease and that the oysters had been produced in the waters surrounding Tilghman's Island.

The United States Public Health Service and the Maryland State Board of Health rendered active and valuable cooperation in connection with the investigation while the National Oyster Growers and Dealers Association offered freely the services of that organization.

Besides the Champaign epidemic, outbreaks of typhoid fever in Binghamton, N. Y., Shippensburg, Pa. and Lafayette, Ind. were traced to oysters from Tilghman's Island.

Subsequent to the Champaign epidemic, the matter of oyster-borne typhoid fever was dormant in Illinois until the fall of 1923. Perhaps there was very little oyster-borne typhoid fever during that time. On the other hand, such circumstances as the war may have prevented the detailed epidemiological investigations which are necessary to locate the source of trouble in such cases.

Evanston Epidemic of 1923

In November and December of 1923, about 30 cases of typhoid fever developed in Evanston and vicinity. This was very unusual in that locality of high sanitary standards and, therefore, led to an exhaustive epidemiological investigation which indicated raw oysters from Crisfield, Maryland, as the carrying agent. This finding, which was unanimously concurred in by Federal, State and local public health authorities, who had been active in the investigation, resulted in a local embargo on the Crisfield oysters. After this action, the epidemic promptly subsided.

The embargo, logically enough, resulted in a serious loss of business for Crisfield oyster producers and dealers. Accordingly, they immediately set to work on sanitary improvements which, according to reports made by an inspector from the U. S. Department of Agriculture, brought a remarkably favorable change in conditions

there. Among other innovations, daily bacteriological examinations were introduced at Crisfield.

In the meantime, the Illinois Director of Public Health, whose legal duty it is to protect the public health, concerned himself with the problem of preventing a recurrence of the Evanston experience. To this end the problem of devising a practical means for minimizing the health danger from contaminated raw oysters, handled in bulk, was brought to the attention of the Illinois Board of Public Health Advisors in January of 1924.

Difficulties of Oyster Control

From the outset, it was realized that one of the chief difficulties was the identification of oysters. Local merchants usually buy from more than one wholesaler and the latter, in turn, buys from a number of national distributors. The national distributors buy from numerous producers. In addition to this, the producers and distributors follow the practice of pooling shipments to distant points so that one car lot may bring oysters from several shippers consigned to several different merchants. Still more perplexing was the practice of oyster shippers of omitting to label their containers.

The action of the Board of Public Health Advisors caused a number of subsequent conferences between State and local health authorities, State pure food authorities and representatives of the oyster industry. These conferences culminated in the creation of a standard for judging the sanitary quality of oysters. This standard, which was presented by the Illinois Food Standard Commission in October, 1924, reads:

"Oysters are the clean, sound, wholesome product of the shell fish know as *ostera*, an edible genus of lamellibranch mollusks, which have a score not greater than one hundred (100) using the method adopted by the American Public Health Association in 1919-20, and which contains, all tolerances provided for, not more than ten percent (10%) by weight of free liquor."

The standard was approved on December 6th by the Director of the Illinois Department of Public Health and the Board of Public Health Advisors with the general understanding that it should become effective on January 1, 1925.

Chicago Epidemic of 1924-25

Toward the latter part of November, 1924, a noticeable increase in the typhoid fever incidence in Chicago and the metropolitan district of Cook County was reported. Within a few weeks, the outbreak involved more than 100 cases. Since the public has come to know that typhoid fever is distinctly a preventable disease, and since many of these cases were found among people whose sanitary-hygienic habits and environment were on a very high plane, the situation called for a very thoroughgoing investigation. This was ordered and all of the evidence collected by a number of workers from several organizations pointed to raw oysters as the source of the trouble.

Apparently, the local oyster dealers, who were intimately acquainted with the situation, experienced difficulty in securing oysters with a bacterial count low enough to conform to the standard agreed upon. In their efforts to cull out the oysters showing the highest bacterial count, they had ceased to order from certain of the larger distributors. This, of course, affected chiefly the Chicago market. In addition to this, the radio had been utilized by the Chicago health authorities as a medium of publicity for warning people against the possibility of eating contaminated raw oysters.

These circumstances reduced the sale of oysters on the Chicago market to about one-fifth of the normal, according to the dealers. Naturally enough, they resisted any movement that would tend to reduce their business still further. They sought to avoid further adverse publicity and the Standards Commission of State Food and Dairies Division also agreed to postpone until March 1, 1925, the date on which the standard for judging the sanitary quality of oysters was to become effective.

All of these things, however, did not influence favorably the typhoid fever situation. An excessive number of new cases continued to be reported from week to week, while the accumulated epidemiological data pointed more and more strongly toward the oyster as the offending agent. Weight was added to this evidence by reports from such widely separated cities as New York, Cincinnati and Washington, where typhoid fever cases in considerable numbers had apparently resulted from contaminated oysters.

The newspapers gave but little space to publicity matter relating to the possible danger from eating raw oysters, presumably because, in the absence of positive and absolute evidence, publicity of this charac-

ter might be regarded as an act in restraint of trade. Those responsible for the administration of the pure food laws presumably were not completely convinced that contaminated oysters had caused the excessive typhoid incidence or else they felt that sufficiently rigid control measures were, for the time being, operative. At the same time, there was a very plausible probability that oysters refused on the Chicago market, because of high bacterial counts, would be diverted to the down-state markets. This, of course, would endanger the public health.

Methods Adopted for Control

Because of this situation, it was deemed advisable to warn the down-state population against the possible danger from eating raw oysters. To this end, a communication was directed to all local health officers who were asked to warn the public against this practice. They were asked also to make careful investigations of all cases of typhoid fever with especial reference to any relation to oysters. At the same time, a press dispatch embodying the warning was sent to nearly 1,000 newspapers in the state. In this movement the Division of Foods and Dairies of the State Department of Agriculture cooperated, instructing the members of the field staff to assist local health officers in efforts to detect consignments of insanitary oysters and to keep the market clean so far as possible.

About the same time the State Director of Public Health addressed a communication to the United States Senators and Representatives from Illinois calling their attention to the existing typhoid fever conditions in Illinois; the apparent danger from and the lack of sanitary control methods over oysters; and suggesting such national legislative action as would be necessary to remedy the situation.

During the second week in January, 1925, a careful survey of the situation showed that raw oysters were offered for sale without restriction at almost all of the usual places, that new typhoid fever cases continued to develop at an excessive rate and that cases apparently due to contaminated oysters had appeared in communities away from the metropolitan area of Cook County.

The situation manifestly called for more drastic action to protect the public health or a complete abandonment of efforts in that direction. The former was chosen and after conferences with the Governor and the Board of Public Health Advisors a set of regulations rigidly modifying the sale of raw oysters and making it illegal to eat raw oysters in Illinois was adopted and placed in effect. It must be emphasized, however, that no restrictions whatever were made or suggested in regard to the sale of oysters which were to be cooked.

The regulations were temporary in character and were designed solely as a means of protecting the public health, until such time as some practical measure of judging the sanitary quality of oysters could become operative and thereby prevent contaminated oysters from reaching the Illinois market. On the other hand the regulations resulted in a considerable embargo on oysters in Illinois. This attracted nation-wide newspaper notice and, according to reports, seriously curtailed the sale of oysters throughout the country.

The effect of the Illinois regulations on the general oyster industry caused representatives of the National Oyster Growers and Dealers Association to take immediate steps to bring the raw oyster back into public favor. Efforts along this line led to communication with the Illinois State Director of Public Health and ultimately to a conference in Springfield between representatives of the oyster industry and State health officials.

Oyster Conference

At this conference the Illinois Department of Public Health presented a plan approved by the Advisory Board of the Department, designed to operate on a national scale, which would exclude from the market all oysters that did not conform to a reasonably high sanitary standard. The plan still further provided for packing and shipping methods that would facilitate the identification of oysters from any source.

This plan was unanimously agreed upon by all members of the Springfield conference and was officially adopted three days later by a conference of National and State Health and other public officers, and representatives of the oyster industry, which took place in the offices of the Surgeon General of the U. S. Public Health Service in Washington. The plan as adopted, reads as follows:

"Resolutions adopted by Conference of U. S. Public Health Service, Bureau of Chemistry, Bureau of Fisheries, with State

and Municipal Health Authorities, State Conservation Commissions and Representatives of the Shellfish Industry Regarding Measures to Insure the Future Safety of Shellfish. Held at the Bureau of the Public Health Service, Washington, D. C., February 19, 1925.

"1.—The beds on which shellfish are grown must be determined, inspected and controlled by some State and Federal official agency.

"2.—The plants in which shellfish are shucked or otherwise prepared or packed by the shipper must be inspected and controlled by some State and Federal official agency.

"3.—The freedom from typhoid bacilli of the workers who handle shellfish must be determined by some official governmental agency.

"4.—Failing to secure sufficiently high standards to protect the people as regards beds, floating and plumping practices and methods of shucking or other methods of preparation, a satisfactory practical method of pasteurization, or other heat treatment or chemical, or biological method which produces satisfactory results, must be installed and operated under proper governmental supervision.

"5.—There must be such governmental supervision and such trade organization as will make plain the source of shellfish and will prevent shellfish from one source being substituted for those from another source. This will be chiefly a problem of the individual State.

"6.—The methods of shipping must be supervised, inspected, controlled and approved of by the proper official Federal and interstate agency.

"7.—The methods of storing, displaying for sale and dispensing must be determined, inspected and controlled by the proper State or city agency.

"8.—The product must conform to an established, bacterial standard and must meet Federal, State and local laws and regulations relative to salinity, water content, food proportion and conform to the Pure Food Law standards. There should be a revision of the existing bacteriological standards for oysters."

As soon as the control plan was adopted, the necessary machinery for placing it in operation was created. This consists of various committees representing all of the interests concerned. Very cordial relations between all of the representatives exist so that there is every hope of not only having wholesome oysters on the market in the future but of preventing the recurrence of oyster-borne typhoid fever and the unhappy consequences incident thereto.

As soon as the control plan for regulating the sanitary quality of oysters offered for sale had been accepted and ratified by responsible organizations capable of putting it into operation, the Illinois State Director of Public Health took steps to rescind the regulations affecting the sale of *raw* oysters in Illinois. A survey of the typhoid fever situation was made. This revealed a very sharp decline in the incidence that brought case reports down well within the usual expectancy. The emergency was regarded as having passed and the regulations were very promptly revoked.

Reasons for the Oyster Embargo

The position of the Illinois State Department of Public Health in reference to the oyster industry and its relation to excessive typhoid fever was justified from every reasonable standpoint. In the first place, typhoid fever was noticeably excessive during the months of November and December of 1924 and January of 1925. This same thing was true for the same months of the previous year.

Usually, typhoid fever incidence reaches its peak in August or September and then falls off rapidly during the remainder of the year, showing no definite tendency to increase again until the following summer. In 1924, there were 191 cases reported in September and 231 in December. For January of 1925, the number of cases reported was 119, considerably greater than is usual for that month.

In the second place, the results of very careful epidemiological investigations into the cause of the past season's increase in typhoid, conducted by a number of independent investigators, coincided and pointed toward raw oysters as the carrying agent. The United States Public Health Service reported definite findings indicating that contaminated oysters had been on the market and had, beyond reasonable doubt, caused typhoid fever in a considerable number of cases.

Subsequent events also justified the action of the health authorities. Within two weeks (the usual incubation period for typhoid fever), after the establishment of the regulations forbidding the consumption of raw oysters, the weekly reported typhoid fever incidence in the state fell to less than one-third of that for the weeks preceding, while the Cook County incidence dropped to two cases per week against a maximum of 39 for the peak week of the epidemic.

Safe Oysters

The National Oyster Committee met with chairmen of sub-committees on June 2nd, in Washington, and there is every evidence

that oysters in the future will be grown under better conditions and supervised by both National and State officials. The finished product, when shipped into Illinois in the future, will have a certificate authenticated by the state health authority and the U. S. Public Health Service. These precautions should make oysters safe and wholesome as a food. Still greater guarantee of safety can be obtained if these certified oysters are bought by the consumer in original package cans, thus preventing both the possibility of contamination or adulteration by the middleman or the final dealer who sells the product. There is considerable evidence, too, that chlorination process for oysters will soon be worked out which will provide still greater guarantees for safety to the consumer.

The entire oyster industry is to be congratulated on the enormous strides made for providing safe, wholesome oysters.

Sclerema Neonatorum (a Case Report)

By W. E. ALLYN, M.D., Cleveland, Ohio

BABY D. (male), was delivered at the Woman's Hospital, Cleveland, by Dr. S. and was estimated to be one month premature. No instruments were used and delivery was considered normal. The birth weight was 4 lbs., 11 oz.

Physical examination revealed nothing abnormal for the fetal age except well marked depression of lower half of sternum. Child was cyanotic and spit a good deal of mucus the first 12 hours.

Not being strong enough to draw at the mother's breast, and the mother not having milk in sufficient quantity to be expressed, donated breastmilk was fed with a medicine dropper every two hours, beginning at the end of the first 24 hours. The child took the milk very slowly and retained little, if any, of it.

The attending physician asked me to examine the infant at the end of 48 hours, the nurse having reported a peculiar hardness of his calf muscles. At this time, the whole of both lower extremities seemed stiff and unwieldy. The calf muscles especially had the feel of a piece of wood. The muscles of the upper back and the back of the neck were next in the severity of this boardy feeling. All the musculature of the extremities, chest and abdomen seemed to be far from normal, the abdomen being the least affected. The cheeks were decidedly hard, though not quite so hard as the back of the neck. The skin did not pit on pressure and seemed glued to underlying structures. Temperature was normal, probably because he had been in an incubator.

Two special nurses were placed on the case, who soon succeeded in getting the child to swallow 2 drams of breastmilk every hour and a half and a small amount of water, though 45 minutes were required for each feeding. If more than 2 or 3 minims was placed in the mouth at a time, it simply floated about and came out, and for several days swallowing seemed difficult, although very little induration could be detected in the throat muscles.

About the 5th day, he began to swallow better and take a larger amount; the interval between feedings was then lengthened and the baby put to the breast for part of each feeding.

By the tenth day a considerable improvement was noted in the induration of subcutaneous tissues and muscles, and from then on improvement in this condition and in strength was rapid. At the end of fifteen days he was able to get sufficient nourishment direct from the breast and was discharged from the hospital. On making my first call at the child's home, a few days later, I found that he had developed a marked jaundice.

Now, at the age of six weeks, he is still somewhat jaundiced though not so deeply, and there is bile in the stools. He weighs 5 lbs., 11 oz., and seems normal for his age, all boardy feeling of muscles having disappeared.

The treatment consisted in keeping the baby in an incubator at a temperature of about 100° F. for first few days, gradually decreasing the temperature as the improvement progresed, and in an untiring effort to get breastmilk swallowed.

Cases Formerly Reported

In reviewing the literature, one finds quite a number of cases reported. Griffeth calls attention to the fact that many of them hardly belong in this classification.

He says (page 299 Vol. 1, "Diseases of Infants and Children," edition 1919) that, up to 1897, he found five, undoubted and detailed cases published in the United States. At that time he reported one case and later another. He also says that the disease is much more common in Europe than in America. Cases recently reported would bear out this statement.

W. Giffird Nash reported one (*Brit. Med. J.*, May 19, 1924). The child showed the first symptoms when 19 days old and recovered in 5 months, the treatments being two hot baths a day and one grain of grey powder *t. i. d.*

E. Bourne reported one case (*Lancet*, Feb. 25, 1922). The child first showed symptoms on the fifth day. The treatment consisted of 1-8 grain of grey powder and 1-6 grain thyroid extract per day; the bowels were irrigated with sodium bicarbonate, 1 dram to the pint, once daily. The baby was kept in an incubator at temperature, 40° to 42° C. (104° to 107.6° F.).

A. E. Hodder (*Brit. Med. J.* May, 1920) reports a case associated with placenta prævia. The condition was noticed at the first bath. The buttocks, thighs and the backs of the hands and feet were principally involved. The baby had much difficulty in swallowing and died when nine days old.

The only recent American case found was reported by Geo. Dow Scott (*Amer. Med.*, June, 1917). An infant, six weeks old, showing extensive involvement of buttocks. The treatment consisted in local inunctions with goose grease and internal medication with syrup of iodide of iron.

Many theories have been put forth as to the cause of this peculiar condition. Finkelstine and Sommerfeld published an article in March, 1923 (*Monatsschr. f. Kinderh.*, Leipsic), entitled, "Pathogenesis of Sclerema in Infants". They say "of the three factors which are usually considered responsible for fat sclerema in infants—markedly subnormal body temperature, a peculiar character of the body fat, and acute dehydration—the author would associate sclerema only with the latter." The symptoms were so thoroughly developed by the end of 48 hours, in my case, that it seems some other factors must be involved.

David Lieberthal (Cutaneous. Dis., Jan. 1918), in reporting a case of scleroderma, describes sclerema and says: "The prognosis in those cases which begin in the first few days is uniformly unfavorable." In fact, medical literature is uniformly pessimistic in regard to the condition, and for this reason I have given minute directions for handling the case, and very briefly described the condition. I attribute the recovery of this case to the untiring efforts of my nurses in getting the child to swallow. Undoubtedly, if tube-feeding had been resorted to, the outcome would have been different.

10208 Euclid Avenue.

Personality

THE difference between an individual learned in medicine and one successful in the practice of that art depends more upon his ability to impress his patients, inspire their confidence and help them by means of his personality than upon anything else.

—Dr. Given Campbell, of St. Louis.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

(Communications for this department should be addressed to Dr. Blech, 108 No. State St., Chicago, Ill. Contributors who do not wish their names published will indicate a pseudonym or initials desired.)

Preachment No. 3

Philosophy of Surgery: In the first preachment, allusion was made to the philosophic side of surgery with the promise of a separate treatment of this problem.

This is indeed a difficult subject to discuss, for the reason that surgery is so purely a naturalistic science or art, that little of the speculative is left in its characteristics and its philosophy can have no resemblance to that part of philosophy which has been termed moral philosophy.

To impress the reader with the importance of our science, it is only necessary to recall that no less an authority than Hufeland, in the last century, placed the science and practice of medicine second in importance only to that of theology. How many there are who would make the same statement, today, outside of Dayton, Tennessee, is problematical, but certainly not very many. Biology has flooded with its light the civilization of Europe and America, and, while theology, as a more or less speculative science, or, as some would have it, psychology, permeates every nook and corner of human habitation, it no longer can compete with concrete sciences.

To further appreciate surgery as it is today, it must be recalled that, not so very long ago, the clinicians would have been highly insulted to be called surgeons, for the socalled practice of surgery was in the hands of barbers—men who had no academic training, knew mighty little of surgery and much less of internal medicine. It is only through the efforts of a few gifted men that surgery was developed as a science on a par in dignity with internal medicine.

The pendulum now seems to have swung in the opposite direction and, today, many surgeons consider themselves superior men as compared with their erstwhile disdainers —the internists; but the fact remains that the practice of really scientific internal medicine is much more difficult than that of surgery.

The diagnostics of internal medicine is more difficult as compared with that of surgical disease, and the therapy of internal disease is more difficult because it is not so easily controlled and checked as is operative therapy. True, the surgeon has to have manual skill, but one should be careful not to mix up the tangible and spectacular with true science. It is palpable that a silent internist may acquire a reputation faster and maintain it against many accidents, as compared with his colleague who has to "cut" his way to a reputation and then often is thwarted by accidents over which he has no control; but, after all, this is an economic and not a philosophic problem.

True internal medicine and true surgery no longer oppose each other in battle array, for the battlefields can no longer be defined, because no one can tell where the domain of internal medicine ends and where the kingdom of surgery begins. To illustrate what is meant, we cite an example. Time was when no physician would have even dreamed of consulting with a surgeon because a patient had resisted prolonged treatment for dyspepsia. The mere thought of operation for so palpable and notorious an affection belonging to the internist would have been ridiculed as the vaporings of some distorted mind. Today, gastroenterologists work hand in hand with competent surgeons and obtain triumphs for the common cause of scientific General Medicine.

And on what are these surgical (?) successes based? Certainly not on operative skill alone, but on the solution of rather difficult diagnostic problems, with which both internist and surgeon must be familiar.

As I intend, in the near future, to publish an article on this subject, either in CLINICAL MEDICINE or in some other hospitable magazine, reprints for the readers will be available, and I can therefore conclude this preachment with the moral: *Be a good physician first of all and, if you desire to restrict your work to mechanical thera-*

peusis, become an operating physician rather than a mere surgeon.

Surgical Exercise No. 1 (see June issue)

Recapitulation. You are called by a colleague without surgical experience to do a herniorrhaphy, under local anesthesia, for an incarcerated inguinal hernia. The patient lives in a farmhouse far from a town. A young hired man and a deaf wife are the only persons available at the house. The requirement calls for a description for every step up to the moment of beginning the operation proper, to show that there will be no break in the aseptic procedures.

Discussion by "Country Surgeon"

I would preface my remarks by saying that absolute asepsis in a farm kitchen is practically impossible. But, I think a fair degree of safety may be attained for this patient by the following technic:

1.—Remove from the kitchen all furniture, utensils and other impedimenta, except what will be required in the way of tables, benches, chairs and, of course, the kitchen stove, with the necessary pots, kettles, etc.

2.—Wipe off with a clean cloth, moistened with chlorazene solution 1-1000, all walls, woodwork and furniture. The floor should also be mopped with a similar solution.

3.—See that plenty of water is boiled, and cooled in clean vessels covered with moist gauze.

4.—In the meantime, have the patient undressed and given a sponge bath and a clean nightshirt. The pubis is to be shaved; the skin, for a wide area around the site of operation, scrubbed and a chlorazene solution applied. Not until he is placed on the operating table, when all is ready, should this be removed.

5.—All instruments likely to be used should be sterilized by boiling; and all sheets, towels, etc., which are likely to come into contact with the instruments or wound should be wrung out of 1-1000 chlorazene solution, and placed, folded, under a moist covering, where they are readily accessible.

6.—While this is being done, the operator and all assistants should proceed to scrub, preferably in an adjoining room. Then, having put on their gowns, they complete the preparation of the operating room.

7.—The operating table is covered with a clean, dry sheet; a comfortable pillow in a clean pillow-case is provided; and a sterilized rubber sheet, or Kelly pad, covered with a moist towel, is placed where the pelvis will rest. The instruments are placed on a convenient stand, which is covered with a moist towel, or in a shallow basin or tray containing boiled water; and the whole covered with a moist towel until required for use.

8.—The patient is then placed on the table, the upper part of the body and the lower limbs being sufficiently covered for warmth. The temperature of the room should be about 78° F.

9.—The compress is removed from the site of operation, the skin painted with iodine solution, and moist towels laid over the lower part of the abdomen and upper part of the thighs.

10.—The surgeons and assistants lave hands and arms again in chlorazene solution, rinsing off in sterile water, and are ready to begin the operation.

Discussion by Dr. Edmund Levisohn, Chicago

If we assume that gowns, gloves, suture materials and dressings have been transferred to the patient's home in a sterile condition, the rest can be readily taken care of.

Upon arriving at the patient's home, my first step would be to take several large pots and kettles, fill them with water and set them on a stove to boil. In one of them, I would boil my instruments and containers for disinfecting fluids, such as alcohol and iodine, and use another for anesthetic solution.

Utilizing the larger of the two kitchen tables, I would place thereon a blanket, covering it with newspaper, or oil-cloth if available, and then with a clean sheet. Now, place the patient upon the table and shave and clean the parts, then apply a towel, which has been soaked in an antiseptic solution, to the site of operation.

Make up a considerable quantity of an antiseptic solution in cold water, which can be placed in a hand solution basin and may be warmed by the addition of some of the boiling water. Next, place 8 or 10 towels in an antiseptic solution for use around the line of incision and upon which instruments can be placed. Now pour off the water from the instruments, leaving them in an accessible place; then scrub your hands and forearms, and instruct Dr. Helpless to imitate you.

Pour the solutions for skin antisepsis and for anesthesia into sterilized containers; draw on gown and gloves and then carefully

spread one of the antiseptic towels on the second table; remove the instrument from the pot and sort them for most accessible use. Paint the skin with iodine and alcohol; place the sterilized towels in position around the site of incision; and proceed with anesthesia and operation.

Discussion by Dr. G. A. McDonald, Fairfield, Ill.

Under the circumstances enumerated in this case, I would sterilize, in my office, all instruments, dressings, sutures, needles, syringes, gloves, sponges, towels, gowns, solution for local anesthesia, etc. I would wrap all these in sterile wrappers and pack them in my grip, ready for transportation to the farm. I would carry my own hand basins, a liberal supply of towels and a basin or tray for antiseptic solution for instruments, or for other purposes. This outfit, together with my medicine case, would be my equipment.

On arriving at the farmhouse, I would set instrument bags on the floor or a table, out of the way, and give attention to the patient. Taking from my case a bottle of alcohol and some absorbent cotton and sterilizing a small surface over the insertion of the deltoid muscle, upon the left arm, I would give him a hypodermic of hyoscine, morphine and cactoid (unless in some way contraindicated) from my hypodermic case, which I always carry in my medicine case.

I would then examine the patient to see if he had a strangulated hernia and, if so, whether the hernia was direct or indirect, as upon this differential diagnosis would depend where and in what direction the incision should be made for release. If I found a strangulated hernia, I would undertake first to reduce it by taxis. I would not take the word of Dr. Helpless, or that of any one else, that the hernia could not be reduced until I had tried it myself. Failing in this, I would proceed to prepare for the operation.

Have the deaf woman bathe the patient and put a clean gown upon him, then bring a pillow and two clean sheets for the patient and operating table, which I had arranged, in the meantime, as to light and accessibility, and with due regard for the arrangement of the room as to shape, stoves, doors, furniture, etc.

I would assist patient upon table, unpack my bags, depositing the contents upon a table, but not unwrapped. In an open vessel nearby, I would have a supply of water that had been boiled. I would then scrub and put on a gown; have Helpless do the same.

I would then scrub, sterilize and shave the site of operation; dip my hands in sterilizing solution and dry them on a sterile towel; and unpack my instruments, dressings, etc., depositing them upon a table or stand covered with sterile towels and within handy reach.

I would dip my hands in the solution again; dry them, and put on gloves; take the sterile syringe from the instrument stand, fill it with the previously-prepared, septic, local-anesthetic solution; screw or slip on the needle and make the infiltration at the desired place and in the amount needed. The case is now ready for the incision.

Discussion by "W. W."

1.—While talking to Dr. Helpless, direct him to have plenty of hot water on hand when you arrive.

2.—On reaching the patient's home, make a hasty but accurate survey of the case and direct Dr. H. to administer one No. 1 H-M-C tablet, hypodermically, while you survey the prospective operating room and get the instruments and utensils on to boil.

3.—Put a wash-boiler on the fire and in it place 3 basins, one pitcher or large dipper and a soup bowl, and cover all with water. It simplifies matters to suspend these articles in a long towel, or other cloth, which may be attached to the two handles of the boiler. This facilitates their removal without danger of contamination.

4.—Choose another kettle or bread pan large enough to accommodate all necessary instruments and in it place the instruments, syringes, glass graduates and two nail brushes; cover all with water and place on fire to boil.

5.—Take any handy vessel, crock or otherwise, and prepare a 1-10,000 bichloride of mercury solution and by making signs or talking the finger language direct Mrs. Housewife to mop the floor. (Do not remove any furniture or draperies, but cover with sheets.)

6.—Start Mr. Hired Man to killing flies, and keep him at it.

7.—Have Dr. H. shave the operative area, dry.

8.—If one of the kitchen tables is of extension type, extend it and remove the leaves. Take two of the leaves and place them lengthwise through the middle of the

table, thus converting the table into No. 1. If both tables must be used, boards may extend from one to the other to make a similarly shaped table.

9.—Upon this improvised table, place one or more folded comforters, or blankets, and a pillow. Over these spread a clean sheet.

10.—Extract from the parlor the center table that supports the reading lamp and Bible and place it in a convenient location for supplies and instruments. Cover with a clean sheet.

11.—Place surgical bundle upon table No. 2 and remove pins. (Point out the remaining flies that have escaped the hired man.)

12.—Direct Dr. H. and the hired man to wrap the patient in a blanket and carry him to the operating table. See that the patient is comfortable.

13.—Arrange clothing and blankets so as to permit free exposure of operative area.

14.—Cover the patient above and below the operative area with folded, clean sheets. Allow these sheets to extend and cover the table completely at both ends.

15.—Instruments and utensils should have boiled sufficiently by this time, so drain the water off the instruments, set pan on back of stove and remove cover. Drain enough water off the utensils so that they may be removed without touching the inside of any of them.

16.—Place two or three chairs side by side and cover them with a sheet. On these chairs place the basins. With the dipper or pitchers, fill two of them two-thirds full of water from the boiler. In the third basin, place about one pint of alcohol. Remove the soup bowl from the boiler and in it place three 7.3-grain tablets of bichloride of mercury and fill with water from the boiler; in this solution, the tubes of catgut are to be placed after the water cools, or if any cold, boiled water is on hand, it may be used in making this solution.

17.—On a chair, or other rest, place the bottles containing liquid soap, iodine and the already-prepared anesthetic. (1-2 of 1 percent procaine.) Loosen corks, but do not remove them.

18.—By grasping outside cover of surgical bundle, throw back the cover exposing contents wrapped in table cover.

19.—Direct Dr. H. to imitate you. Trim and clean the finger-nails. Take nail brushes from instrument sterilizer, being careful not to touch anything except the brushes, hand one to Dr. H. and direct the hired man to pour from the bottle, liquid soap upon either the brushes or your hands and proceed to scrub thoroughly from finger-tips up to and above elbows, using basin No. 1.

20.—Using basin No. 2, rinse hands and forearms.

21.—By taking hold of the outside folds of the inner wrapper of the surgical bundle, spread the cover outward, covering the table completely and exposing the contents.

22.—Take from the bundle the two towels which are on top. Hand one to Dr. H. and with the other thoroughly dry hands and forearms.

23.—Soak hands in the alcohol and wash the forearms in it.

24.—Fan arms lightly in the air and let the alcohol evaporate.

25.—Pick up the first gown and help Dr. H. into it and direct the hired man to tie the tapes in the rear. Put on your gown and likewise have the hired man tie it.

26.—Take from the Surgical bundle one pair of gloves, and from the cuff of one extract the gauze sponge which is loaded with talcum powder and dust hands thoroughly. Holding the gloves by the everted cuffs, slip the hands into them without touching the outside of the gloves with bare hands.

27.—Take the second pair of gloves and hand Dr. H. the powder-puff. Hold his gloves for him, one at a time, with cuffs wide open and slip them on his hands.

28.—Direct the hired man to slip the linens away from the operative area and to pick up the iodine bottle and remove the cork and be ready to pour some of it as you direct.

29.—From the surgical bundle, take two large towels and drape one above and the other below the operative area, covering the blankets or linens. Take a pair of forceps from among the instruments and a sponge from the bundle and make a swab. Hold the swab at the patient's umbilicus and direct the hired man to pour a quantity of iodine on the swab. Paint a liberal area about the field and discard both forceps and sponge.

30.—Direct Dr. H. to stand on opposite side of table and with his assistance place one sterile cross sheet above and one below the operative area.

31.—Place a large lap sheet in position with opening over inguinal region. (Do not use towel clamps, as the patient objects.)

32.—Take from sterilizer the glass syringe and the needles. Assemble the syringe and attach a fine needle.

33.—Take the glass graduate from the sterilizer and direct the hired man to pour into it the anesthetic solution. Watch him to see that he pours out a few drops first, then that he does not touch the graduate with the neck of the bottle.

34.—Remove the instruments from the sterilizer and place them upon the table vacated by the contents of the surgical bundle.

35.—Load the syringe with anesthetic solution.

36.—Direct the hired man to sit down at patient's head and hold his hands if necessary.

37.—Elect the spot for initial injection. Pick up a fold of skin in your left hand and with syringe in your right you are ready to proceed.

I feel sure that the surgeon accustomed to operating-room conveniences and six or seven trained helpers would be badly handicapped by the conditions laid down in your requirements.

In my practice, I have learned to keep ready what I term my "Laparotomy Set". It consists of everything required to do any ordinary abdominal operation, including three basins, pitcher, gowns, linens, laparotomy pads, sponges and gloves (dry sterilized). This outfit is kept packed in a large suit-case together with an etherizing outfit, ready to go.

There are just three packages; i. e., one containing two gowns; one containing basins and pitchers; and the other is the Surgical bundle which has everything from small sponges up to and including a table cover, which is spoken of above as the inside wrapper.

When a call comes, all that is necesary is to pick out necessary instruments and proceed to scene of action and we are usually ready to work in about thirty minutes. The contents of the surgical bundle are so arranged, from the top down, that the article you need next is always on top.

Discussion by Dr. E. C. Junger, Soldier, Iowa

Immediately upon arrival, I would administer a hypodermic of H-M-C, partly to see whether taxis can not be accomplished under its influence; partly as a preliminary to operative procedure.

While awaiting the action of the drug, I would boil some sheets, pillow cases and towels, old kimonas or linen aprons for use by myself as well as on the patient, and, in a basin, I would boil a few instruments and sponges. I would prepare, by boiling, sterile physiological saline solution, sufficient in quantity for sponging, application to the gut and, if need be, also for hypodermoclysis.

After all has been boiled and while waiting for everything to cool, I would ask Dr. Helpless to administer an anesthetic or, if he was too nervous, I would have the hired man do so, while the wife with the doctor or the hired man, whoever happened to be free, could hold the patient down while going under the influence of the anesthetic. Again, I would try taxis gently, and, if the bowel refused to slip in, I would paint the operative region with tincture of iodine, surround it with a few wet towels and paint my own hands with tincture of iodine, after having placed all necessary equipment within reach, and cut down on that sack, incise the ring..... (Dr. Junger continues by describing the technic of herniotomy.)

Discussion by Dr. Martha K. J. Blanchard, Kirk, Colo.

Note: Dr. Blanchard sends a lengthy communication on surgery outside the hospital, in country districts, with excellent results and believes—I know not why—that my exercise suggests that I have no faith in country doctors. As a matter of fact, I said nothing of the kind, implied nothing of the kind, but did insinuate that competent surgeons capable of operating aseptically in modern operating rooms would have difficulty in carrying out asepsis if all details were thrown on their shoulders.

Her discussion proper follows:

I sterilize 3 small sheets, 15 towels, sponges, dressings, etc., in a high-pressure cooker for at least two hours. Each package is marked after having been wrapped in two layers of unbleached muslin. I pack my instruments and rubber gloves into sterilizer ready to be placed on the stove.

The "kitchen table" is obsolete, as any one doing surgery has a portable enamel table easily folded and put into the car, also a rubber pad for the table. I also take with me two enameled basins so as to be independent of the household "pots and kettles".

Any room selected is mopped to lay the dust, flies are exterminated and as much

furniture as possible is removed from the room.

The sterilizer and two kettles of water are placed on the stove to boil for at least half an hour; the patient is cleaned and shaved.

A small tray contains two knives, two scissors and sutures, over which a bottle of lysol is poured; the two basins are swabbed with phenol and rinsed with sterile water. In one basin, I rinse the instruments from the lysol bath, producing a lysol solution, and into the other I pour about half an ounce of phenol and iodine.

The next step is to arrange the table, place everything handy, within reach, thread needles, place the instruments in an arrangement to prove handy during the operation. Then the operative field is swabbed with ether, then iodine, which is left on; the lower half of the patient is covered with a sterile field sheet, finally the sterile lap sheet and towels are placed in position. There can not be too much sterile linen covering, as a surgeon working alone must often use the sheet over the patient as an instrument and dressing tray combined.

The above preparation requires less than an hour and, as I have almost entirely looked to details, I feel sure about the asepsis. I always carry three pairs of gloves for an emergency, and thus fortified, I feel safer than in the average hospital.

The hired man holds the lamp and we are now ready to operate.

Editorial Comment

The discussions sent in (I had to reject only a few because they were too polemical and irrelevant in character) are interesting to me and, I feel sure, also to the readers of the Seminar, because they convince any one who has the ability to visualize descriptions, that I am right when I say that operations in private houses without adequately trained assistants are fraught with certain technical difficulties, which even the best of us feel keenly.

It seems to me from the number of discussions sent in and their character, that some do not pay attention to the requirements, take a lot for granted and seem to enjoy wandering off into unanticipated directions.

What were the requirements? Give the individual steps from the time of arrival at the patient's house until the beginning of the operation proper, in order to show that there will be no break in the chain of asepsis. The situation is as follows: The operation *must* be done in a separate farmhouse with ordinary household equipment; the operation *must* be done under local analgesia; and you have an untrained medical man—untrained in surgery, an able-bodied lay man, and an unreliable woman at your disposal.

Every discussion pertaining to anesthesia with ether and the character of equipment and what not has no bearing on the problem.

I have purposely and perhaps arbitrarily presented the requirments, because repetition of hospital technics with a qualified nurse and a qualified assistant is simplicity itself anywhere, but, when one has to play clean nurse and "dirty" nurse and assistant the problem must be thought out systematically, and, to guard against slips, written down. I promise you a brief article on this subject in the near future, but, meanwhile, I will state this:

1.—When you are called hurriedly to see a man who has suffered for hours from an incarcerated hernia, your first duty is to open the sac at the earliest possible moment, or your after results may be the worst imaginable. Why talk of taxis when this was not comtemplated in the requirements? We simply assume that taxis is out of the question.

If this be so, we have no time left for mopping walls and sterilizing floors and removing furniture.

Select the kitchen, if large and bright enough, and, if one must operate in the dining room or parlor, move the furniture as little as possible; if a carpet or similar material is on the floor, cover it with a moist sheet to hold down the dust. Avoid raising dust and you will have no contact infection to fear except such as comes from a contaminated hand.

Your deaf woman is useless to you; she may do a little extra cleaning of pots or kettles, if need be. The hired man is no good to you, except to lift the patient onto the operating table or place a suitable table in position for you.

Dr. Helpless is a physician, and, as such, he *can* and *must* assist you, at least to a limited degree. Surely, under your supervision, he can scrub up; don a gown, mouth-gag and cap; put on sterile gloves; help you put the sheets or towels over the operative field; and, from then on, sponge away blood and retract. That much any doctor can do.

I do not care to enter into any discussion of equipment except to appease two correspondents, who evidently have not yet heard that the triumph of modern asepsis consists of adapting the methods used by the washer-women. When I was a beginner, I had two trunks packed for surgery in private houses. I carried everything. It helped me because the array of appliances overawed the patients and their families, where my personality might have inspired mistrust.

As I grew older and a bit more experienced, I gave the trunks to my wife for traveling purposes and I carry with me as little as possible—instruments, gowns, sheets, towels, dressings, a few sutures, drugs and anesthetics in an old container.

The sterility of the linens is never reliable after they have been stored for a week or more, so that one should either resterilize his packages once a week or resterilize them all before operation.

I carry no sterilizer at all with me, nor enamel-ware basins nor trays, because they are absolutely unnecessary. A wash-boiler gives off steam and a few strips of wood, placed above the water level, hold the linens so that they are fairly dry for use.

Ten minutes' boiling of instruments and gloves is enough to kill every germ known to bacteriology. Any open vessel will do. I do not need the trays because a sterile towel placed over a small table is ideal and sufficient.

The law is to touch nothing sterile before operation, but so to arrange instrument and dressing table that, when you are ready to operate, you can have the hired man slide off the top sheet carefully and everything is sterile there. One can not prepare the field and then go back to instruments and dressings; one can not even put on gloves until gown and cap and mouthgag are on and, even with the best of precautions, there will often be need for slipping off gloves and putting on a fresh sterile pair. That happens even in hospitals.

There is no royal road to success. We can only give a systematic description which we will glady do, as was said, in the near future; but, when one is in actual engagement and finds that, in the midst of all, something has been forgotten and you must soil your gloved hands and break the chain of asepsis, and do part of the work all over again, then you wish you had thought out every contingency carefully beforehand. So, until you hear from me again, imagine the above situation, imagine a worse one with no medical help at all, and, finally, even without reliable lay help. It need not be a laparotomy, it may be any emergency operation—the asepsis is the same.

Surgical Problem No. 7

So many interesting discussions have come in that we must postpone the publication of the solution for the September issue. It is very gratifying that the problem attracted a Swiss physician, who sent us an encomium or nosegay while he was on his vacation in his native land, and a solution or discussion which he had to extemporize, as there was no textbook available at the summer resort. The readers may prepare for a scientific treat.

Surgical Problem No. 8. Presented by Colonel George B. Lake, Chicago

H. M., male, age 19. History of several attacks of pain in lower right abdominal quadrant during past 2 or 3 years.

Present condition: Rather ill-nourished; pain in right side, lower abdomen for past 24 hours, with moderate nausea, but no vomiting.

Examination: Moderate tenderness and rigidity in right iliac fossa; temperature 99.8° F., pulse 90, rather poor quality; leucocytes 14,000, with 86 percent polynuclears.

Diagnosis: Appendicitis, subacute, recurrent, suppurative (?).

Operation: Appendectomy, through right rectus incision; appendix, buried in a mass of adhesions from former attacks, found in a state of moderately severe catarrhal inflammation.

Subsequent history: Patient reacted well from operation. On second day, complained of moderately sore throat. Temperature slightly elevated. The wound was dressed on the fifth day and found clean and dry. Throat is still slightly sore and slight fever is present at times. Patient feels comfortable.

On the tenth day, the stitches were removed and the wound looked well, except that a drop of pus followed the removal of one of the retention sutures. This point was touched with tincture of iodine. Patient is doing well, except for slight, irregular fever.

At subsequent daily dressings, it was found that, instead of drying up, the area of suppuration became enlarged. After 4

or 5 days, a small skin incision was made and the pus cavity cleaned and thoroughly swabbed with iodine.

In order to determine the cause of the infection, the technic of operation was carefully reviewed to find where the break in asepsis had occurred. The efficiency of dressing and water sterilizers was tested bacteriologically and found satisfactory. Plates were exposed in the operating room to determine if there was undue contamination. In brief, no technical error could be found by painstaking search.

Three weeks after the operation, an area of skin and subcutaneous tissue, the size of a man's hand, was separated from the underlying muscles and a moderate quantity of rather thin pus exuded from several small incisions which had been made.

Requirement: State the possible source of infection and outline treatment.

SURGICAL SERVICES have no fixed cost; they are without value in that they are invaluable. As a general proposition, it is true that large fees have a tendency to elevate the profession in the eyes of the business world. This matter of fees has nothing whatever to do with the scientific attainments of a physician or surgeon.

RECENTLY the medical press has editorially, and otherwise, given space to the subject of the division of fees or to the paying of percentage or commission to men who refer or bring cases to eminent colleagues and specialists.

A MAUDLIN, and ill-advised stand has been taken by some in favor of the practice; the argument being that the poor general practitioner is underpaid for his work, gets a mere pittance from his patients, and often nothing at all. This argument falls because of the fact that no man is obliged to render valuable services free of charge. If he does not charge and collect, the presumption is that the services in his own estimation are cheap or without value, always supposing the patient able to pay.

WHERE PATIENTS and their friends and relatives are unable to pay, charity should always be exercised to the utmost by our profession.

WHERE THE ABILITY to pay exists, good fees should be insisted upon. The fee should be in proportion to the service rendered and its value to the patient.

I FAVOR a definite understanding between surgeon and patient before the services are rendered.

—Bernays: "Golden Rules of Surgery".

Clinical Notes and Practical Suggestions

Therapeutic Possibilities of a Doctor's Office

I BELIEVE that doctors' reception rooms, by and large, are the most forlorn places I have ever seen. And they are so uniformally forlorn! — the same sort of uncomfortable chairs; the same antique, ragged and thumbworn magazines on the same kind of bare tables; usually that classic print of a doctor watching a dying child adorns the walls along with a few framed, prosaic medical diplomas hung askew.

It happens that my special job has given me an opportunity to be something of a connoisseur of these drab reception places. I always wait rebelliously in one, longing to reorganize the furniture or sweep it all out and start fresh. A doctor's reception room seems so full of possibilities. It has so much therapeutic value, if you will, a veritable "portal of healings". Doesn't a patient usually come into a doctor's office in a receptive mood? Couldn't a doctor begin the healing process the minute a patient steps over his threshold? How far can his office interpret his willingness to help? How many such questions I have asked myself as I have waited in uncomfortable, badly-lighted offices and how many reception rooms I have mentally refurnished!

It was all accomplished mentally, however, until this winter. But, herein is set down the account of an attempt I really made to refurnish a doctor's office. This physician, whom I knew casually, remarked to me one day that he was planning to redecorate his reception room. Thereupon I burst forth with all my pent up opinions and ideas on the practicability of an attractive waiting room. Now, it happens that he is rather shy and was, I believe, so overwhelmed that the only remark he could make was—"How would you like to experiment on mine?" The opportutiny I had dreamed about for years!

And thereupon we began to study his office from the standpoint of the therapeutics of interior decorating—to consider how we could make one, small, windowless room prepare patients for an audience with His Highness, the doctor himself.

Of course, first of all, that room had to express the doctor (perhaps many of those other rooms expressed their owners, too) his tastes, his interests—because, of necessity, it must lead up to him. Therefore, the first thing to do was to discover that doctor's idiosyncrasies. Then, of course, it must have a keynote; rest, cheerfulness, buoyancy—perhaps dependant upon the branch of medicine that doctor practices. Our appointed task was to work out a reception room for an internal medicine specialist.

And now, after all these weeks, his reception room takes on this character: All the high lights have been removed and low reading lamps placed within reach of all the chairs; one lovely, low parchment shade with a landscape painted in black and yellow sheds a pool of light around the library table and illumines the whole room. Other lights are incidental, and subsurvient to it. A few landscape pictures with a good deal of depth are windows into the lovely out-of-doors. His own first choice of pictures was Maxfield Parrish's "Daybreak". Around its blues and sunshine yellows we built the rest of the room. Every chair has a view and sufficient light for reading.

And then I tried out another of my little theories; the suggestiveness of having well-chosen reading matter so scattered about that it incites attention. Patients while away the tedium of waiting with whatever is at hand, tattered and torn and nondescript in character as it may be. Why not constructive, interesting reading? So, aside from new and up-to-date magazines, we chose books with a good deal of care—and with just as much care will others be added later. Each group of books, placed where the light

falls upon it, represents various interests, somewhat as follows:

For frivolous essays—Will Roger's "Illiterate Digest".

More serious essays—Barrie's "Courage" or one of Cabot's.

For a health book—"Girth Control" or "Diet and Health".

An efficiency book—Bennet's "Human Machine".

Short stories—Herrick's "Master of the Inn".

We metamorphosed this office about three weeks ago. Of course, the doctor flatteringly tells me, from time to time, of the results that are accruing from his rehabilitated reception room. One interesting comment is that his magazines remain unopened. Patients that used to pace up and down restlessly if kept waiting now sink into a chair and are lost in a book. They speak to him of the restfulness of waiting there and the interest they find as they do wait—of course, each one after his kind; some more, some less, some not at all. The too fat lady drops "Girth Control" to get the doctor's own diet list for her; the business man chuckles as he passes, in fun, Will Rogers' sallies to his own physical troubles, and the little housewife finds relief in the dignified quiet of a well-ordered room.

Of course, it was interesting to try to help an internal medicine specialist express himself with therapeutic intent in color harmony, pictures and books, but what joy awaits the person who could be turned loose in a pediatrician's office to do with that as she would!

AMY TAPPING,
American Child Health Association.
New York City.

NATIONAL DEFENSE

"It is my firm conviction that the duty of National Defense, like the general duty of citizenship, should be broadly extended and borne by all our people. We do not believe in or wish to bear the expense to maintain large standing military forces. The very genius of a republic would be threatened by that policy. Freedom, independence, and self-government are all opposed to anything that resembles a mercenary force. But, while military science has advanced to such a degree that it is necessary constantly to maintain a considerable body of trained experts in that profession, the true spirit of American institutions requires that each citizen should be potentially a soldier, ready to take his place in the ranks in time of peril, either in the field or in the necessary productive activity. Not all of our people can pursue a long course of study so as to become trained military experts any more than they can give up the time to become trained physicians, jurists, diplomats and statesmen. Our military forces on land and sea represent the necessary accomplishments in that profession the same as other professions are represented in civilian life. It is exactly because we wish to keep our standing forces small that the average citizen must give some attention to military affairs, precisely as he gives some attention to other government affairs, in order that he may express a deliberate and informed judgment at the ballot box."
—Extract from address of President Coolidge before the Graduating Class, United States Naval Academy, June 3, 1925.

A CASE OF PERITONITIS, APPENDICITIS AND ABNORMAL APPENDIX

I am presenting a case which is such a combination of pathological process that I trust it will be of interest.

I was called recently to see a girl, 11 years of age, complaining of pain (not localized) in the abdomen. There was a history of injury, about a week previously, by a fall from a swing at school, striking on the abdomen. Pain began immediately and continued, with periods of exacerbation and remission, for one week before I saw her. No history of fever prior to this time.

Examination revealed an uniformly distended abdomen; very painful on palpation, or any movement of patient; pulse rapid; anxious expression; flushed cheeks; respiration quick and shallow; tongue coated; temperature 103° F.; nausea; chilly sensations at frequent intervals; knees drawn up; bladder irritable. The diagnosis at this time was acute peritonitis.

I began symptomatic treatment, giving opiates for pain, cold local applications and liquid diet; with instructions to the family to keep the patient as quiet as possible.

The patient felt better in two or three days; but, at the end of seven or eight days, symptoms began to be more marked, especially pain and distention. That night, during the height of the pain, a vaginal discharge of pus was noticed, after which marked relief ensued.

When called to see the patient at this time, I decided that, as pus was freely draining, nature had effected an outlet and all would be well. In a few days, the child began to feel much better and sat up in bed. Then the entire process was repeated.

This recurred at intervals for several weeks, and at last I suggested to the family that an operation was indicated, since, by this time, there was more marked pain over the appendiceal region, and I thought there must be a pus-pocket that did not drain thoroughly. Operation was refused at this time. The case dragged on. As long as the patient was prone in bed, apparently there was little trouble, except for a few days prior to the discharge of pus which occurred at intervals. Then there would be an elevation of temperature, pain and distention, nausea, etc. As soon as drainage was resumed, she felt very well unless her position was altered. Sometimes the temperature would be subnormal for a few days.

This state of affairs ran on for four months and, since there was no permanent improvement manifested, and every time the child sat up or attempted to stand there was a recurrence of pain and other symptoms, followed by pus discharge, the family finally consented to an operation.

Blood examinations showed a marked leucocytosis at this time, and the temperature at time of operation was 100° F.

The patient was operated upon at Emergency Hospital, Austin, Texas, by Dr. Z. T. Scott, who found an appendix with a complete knot, the tip being free. The right lateral aspect of the circle was attached to the vault of the vagina, constituting a fistula. Intestinal and bladder adhesions were numerous, otherwise the abdominal cavity showed no pathology, except that the peritoneum showed evidence of an inflammatory process. The patient reacted promptly and is now recovering rapidly.

The question in my mind is, and has been: was this primarily a case of appendicitis or a traumatic peritonitis, in which the appendix became involved secondarily? When did the anomaly of the appendix develop and why? Or, is it a combination of independent pathological processes?

C. H. OTKEN.

Paige, Texas.

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[We all remember the old saying, *"Ubi pus, ibi evacuo"*. If the family had heeded the doctor's advice, this child would have been saved months of illness.

Whenever we have a pus case, let us insist very forcibly that the pus be *let out*—freely and completely.

There is no ground for believing that appendicitis or peritonitis can result from trauma unless a viscus is ruptured, permitting the escape of infectious material.

The peritonitis probably resulted from a leakage of the appendico-vaginal fistula. —ED.]

DIFFERENTIAL DIAGNOSIS OF SINUS DISEASE

[From lecture by Dr. J. I. Dowling, of Albany, N. Y.]

1.—If the third cranial nerve is involved, with ptosis and congestion of the upper eyelid, the anterior ethmoid cells and frontal sinus are involved.

2.—Bogginess and congestion of the lower eyelid indicate maxillary sinus disease.

3.—Dilated pupil, especially if unilateral, and if myopia, glaucoma and organic ocular disease are ruled out, is due to infection of the posterior ethmoid cells.

4.—A superficial ulcer on the nasal septum opposite to the ostium of the maxillary sinus, indicates infection of that sinus.

5.—A prickling sensation at the roots of the hair may be due to pansinusitis.

6.—Dull, supraorbital pain, in the *morning*, better in the afternoon, is due to frontal sinus disease.

7.—A feeling of splashing within the skull on quick movement points to fluid in the sphenoid sinus. This sign is rare.

THE POSSIBILITY OF IMMUNIZATION OF THE TISSUES OF THE NOSE, THROAT AND EAR BY THE USE OF VACCINES APPLIED LOCALLY*

By HAROLD HAYS, M.D., F.A.C.S., New York

During the summer months of 1924, I had the matter of local immunization of tissues brought to my attention. Credit should be given to Dr. Walter M. Kraus for supplying me with the French literature and vaccines. Professor A. Besredka of the Pasteur Institute had recently made known his results in the prevention of typhoid fever. His experiments prove conclusively that typhoid vaccine can be administered by mouth and give an immunization which will last for a considerable length of time. It is impossible to go into the details of

* Reprinted from *Medical Journal and Record*, February, 18, 1925.

Professor Besredka's experiments here. Suffice it to say that he gave the vaccine to thousands of persons who were exposed to typhoid fever and who refused to take the hypodermic inoculations, and was able to avoid the spread of the disease.

Besredka observed that the intestinal mucosa would take hold of the vaccine better if there was first an ingestion of bile. Therefore the person given the vaccine takes a preparation of bile one hour before breakfast each morning and then takes a tablet of desiccated killed typhoid bacteria a half hour later. This will give an immunization for a year.

After I had taken this vaccine myself and had read the literature, the possibilities of using vaccines, locally, on the tissues of the nose, throat and ear immediately presented itself. Nothing could be simpler than making up a large mass vaccine, with no attempt to isolate special bacteria, and applying it locally to the tissues. Such a vaccine not only would conform to the vaccine used by Besredka but at the same time there was every possibility that the broth in which the bacteria grew, would develop some bacteriophage.

After the first few cultures were made, it was deemed wise to isolate the organisms by spreading them on blood plates in order to check up on the predominating bacteria found in nose, throat and ear infections. Over two hundred vaccines have been prepared during the last few months. In the majority of them the streptococcus (one of several varieties which, often, could not be differentiated in broth cultures) was found either in association with the staphylococcus aureus or in the micrococcus catarrhalis. This, by no means, indicates that these are the only bacteria found in these infections but that these bacteria predominate in broth culture.

The method of obtaining the vaccine is simple. A culture is taken from the desired part. If the culture is to be taken from the nose, the sterile swab should be inserted far back or high up in the middle turbinate region. It is immediately sent to the laboratory, where it is placed in a sugar bouillon and allowed to grow for forty-eight hours. The culture is then sterilized at the proper temperature and put in a four ounce bottle. A few drops of tricresol solution are added to keep it from contamination.

Method of Application

For the local immunization of tissues of the nose, throat or ear, the method will vary according to the part to be treated but the object in all cases is to place it as near the seat of infection as posible. Besredka reports many cases of osteomyelitis which have been cured by making a vaccine and applying it as a wet dressing over the diseased part. I had one case (in the service of a surgeon who was a friend of mine) in which there was severe osteomyelitis of the bones of the hand. A vaccine was prepared (streptococcus) and used as a wet dressing. Within a short time the infection cleared up although it had been going on for months.

For infection in the nose, the method of application is as follows: the nose is thoroughly cleaned out by means of alkaline sprays and douches. To the cleaned mucosa the vaccine is applied on thin strips of gauze or flattened cotton which are allowed to remain in the nose for one half to one hour. This treatment is given twice a week for four weeks. In the intervals between treatments, the patient is given some of the vaccine to use in the nose, either spraying it in or using a few drops of it twice a day with a medicine dropper. This is continued until the entire four ounces of vaccine is disposed of. In antral infections, the vaccine is placed in the antrum at one sitting through the puncture opening. For ethmoid infections (and this includes the cases of asthma) the vaccine should be placed high up against the ethmoidal cells (the Dowling tamponade).

For tonsillar or nasopharyngeal infections, it is best to place the vaccine as far back in the posterior nares as possible. The assumption is that the absorption of the vaccines is through the lymphatics.

For conditions within the auditory canal, the vaccine is dropped into the canal and allowed to remain there for one half hour. The treatment may be given at home twice a day. For the slow healing mastoid wounds, the vaccine is dropped into the mastoid cavity at each dressing or may be applied as a wet dressing to the entire wound.

Types of Cases Treated

The types of cases which have been treated include the majority of the infections of the nose, throat and ear. Chief among these were infections of the nasal sinuses, especially ethmoiditis. There were three cases of asthma associated with an infection of the ethmoid cells. The ear cases include furunculosis, eczema of the ear canal, chronic suppuration from the ears

and five cases of slowly healing mastoid wounds which ordinarily would have been Dakinized.

Results

As we stated previously, about two hundred vaccines have been prepared and well over one hundred administered. In an analysis of one hundred and thirty-six cases, in a variety of nose, throat and ear conditions, ninety-five have shown a great improvement or cure. There have been only six absolute failures and these were in cases of ethmoiditis in which the pathology was sufficient to warrant operation. The author is not in a position to state the beneficial effects of the vaccine in cases of progressive deafness but he feels that an application of the vaccine to the eustachian tube on an applicator which can progress to the middle ear, will possibly result in an improvement of the condition of the tubal mucosa. The majority of cases for which a vaccine was prepared were cases of sinus infection, mainly of the ethmoid cells. If the vaccine is placed in the proper position—that is, high up in the ethmoid region, the results are most gratifying. But the type of case in which most striking results can be seen is in the child who is suffering from socalled repeated colds in the head during the winter months with a discharge of large amounts of mucopus. Almost all of these cases have responded to treatment and this is particularly interesting because these children will not submit to hypodermic administrations.

Conclusions

1.—Reports of the local administration of vaccine for other conditions, such as typhoid fever, have conclusively proved that they will render an immunity.

2.—The preparation of the vaccine is extremely simple.

3.—The vaccine can be administered without any difficulty directly on the part of the nose, throat or ear which is infected.

4.—The broth in which the vaccine grows possibly develops a bacteriophage which augments the effects of the vaccine.

5.—Certain definite results have been seen in those infections which do not respond to ordinary antiseptics.

6.—The local vaccine can be used on many patients who will not submit to the hypodermic injections of vaccines as usually given.

22 West Seventy-fourth Street.

DO YOU KNOW?

That 21,000,000 letters went to the Dead Letter Office last year?

That 803,000 parcels did likewise?

That 100,000 letters go into the mail yearly in perfectly blank envelopes?

That $55,000.00 in cash is removed annually from misdirected envelopes?

That $12,000.00 in postage stamps is found in similar fashion?

That $3,000,000.00 in checks, drafts and money orders never reach intended owners?

That Uncle Sam collects $92,000.00 a year in postage for the return of mail sent to the Dead Letter Office?

That it costs Uncle Sam $1,740,000 yearly to look up addresses on misdirected mail?

That 200,000,000 letters are given this service, and—

That it costs, in one city alone, $500.00 daily?

AND DO YOU KNOW?

That this vast sum could be saved and the Dead Letter Office abolished if each piece of mail carried a return address, and if each parcel were wrapped in stout paper and tied with strong cord?

Moral: Every man knows his own address if not that of his correspondent.

PUT IT IN THE UPPER LEFT HAND CORNER!

POST OFFICE DEPARTMENT.

INTESTINAL OBSTRUCTION
(A Case Report)

On March 2, 1924, I was called to see a man, 55 years of age, who was suffering from intense abdominal pain. He had been up and at work in the morning; felt some discomfort in the abdomen and took a dose of Epsom salts, thinking that would relieve the situation. The salts did not act, nor was any relief experienced.

After one hour, the pain was fairly severe and continuous and the patient came to my office to see me, but I was out and did not return until 3:30 p. m., when I called upon him at once.

I found the patient doubled up on the bed, suffering intense pain, and perspiring freely; extremities cold; pulse 52; no fever. There was a mass in the upper right abdominal quadrant; vomiting; rumbling noise over abdomen; thirst and partial delirium.

I immediately gave a hypodermic of hyoscine, morphine, and cactoid (H. M. C.

No. 1) and ordered an enema prepared, having decided that this was a case of intestinal obstruction, and that the condition was critical. Fifteen minutes after I arrived, Dr. Hertel, of Giddings, came in and I was indeed glad to have some one share the responsibility.

While Dr. Hertel was examining the patient, I proceeded to administer the enema, using a long colon tube, but with no results, although repeated several times.

The patient was apparently getting worse; pulse ranging from 48 to 50; vomiting more frequent and vomitus slightly fecal in character, so we decided that surgical interference was urgently indicated. We notified the surgeon in Austin to be prepared to operate at once and transported patient, by truck, as quickly as possible. Before leaving for Austin I gave a hypodermic of ⅝ grain morphine sulphate. When we reached the hospital, the patient was very delirious; pulse 46; other symptoms unchanged.

The operation was performed as soon as the patient could be prepared, and the gall-bladder was found enormously distended; appendix elongated, and adherent to the gall-bladder (no other abnormality of the appendix found). A loop of small intestine, perhaps 18 or 20 inches long, was thrown forward and impacted and adherent within this artificial half circle. A strip of omentum was torn and impacted and adherent in the mass.

The mass was straightened out after considerable manipulation, and the appendix removed; the gall-bladder drained through a stab puncture and a tube inserted and left *in situ*. The contents of the gall-bladder were of the color and consistency of liquid tar.

While on the operating table, after the intestine was released, the patient's pulse began to improve and, when the operation was over and he was removed from table, it ranged from 80 to 90.

The patient convalesced nicely and returned home on the twenty-first day. With the exception of three slight attacks of pain, due to gas distention, he has experienced no marked discomfort since, and was back at work in two-months' time, apparently in normal health.

C. H. Otken,

Paige, Texas.

THE USE OF INTRAVENOUS GERMICIDES IN THE TREATMENT OF GENERAL AND LOCAL INFECTIONS AND INFECTIOUS DISEASES*

In 1913, Dr. Paul Ehrlich stated that in Chemotherapy lay the highest hope of attaining *therapia sterilisans magna*.

In 1917 we began, at Johns Hopkins, the search for an intravenous urinary antiseptic which would be (1) nonirritating to the kidneys or the veins, (2) nontoxic in therapeutic doses, (3) eliminated in the urine in germicidal strength, and would possess other desirable qualities.

After experimenting with over 250 chemical substances, we seem to have found it in mercurochrome.

This drug may be given in the form of a 1-percent solution in freshly distilled, sterile water, in doses up to 5 mg. per kilo of body-weight (23 Cc. per 100 pounds). It has been given to animals in twice that dose without untoward result.

After intravenous administration, the drug is present in the urine in germicidal strength in from 1 to 2 hours, and maintains that strength for several hours. It is also eliminated by the liver, and is found in the gall-bladder in germicidal strength within an hour; it should, therefore, be able to kill the bacillus typhosus and clean up carriers.

There is increasing evidence that it may be given by mouth, with good results, in intestinal and biliary infections.

Mercurochrome may be given intravenously in doses of 2 to 3 mgm. per kilo without marked gastrointestinal reactions. In doses of 4 to 5 mgm. per kilo, the reactions are frequently severe with high fever. It has been given in doses of 7.5 to 8 mgm. per kilo without any permanent untoward results.

In cases of infections with gram-positive organisms (staphylococci and some streptococci) the use of a ¼ of 1-percent solution of gentian-violet in doses of 5 mgm. per kilo sometimes gives good results. The reactions are nowhere near so severe as with mercurochrome.

Infections with streptococcus viridans seem not to be amenable to this form of treatment.

We have collected a series of about 255 cases treated by this method, including 57

*Abstract of a lecture by Dr. Hugh Young, of Baltimore, before the Chicago Med. Society, April 22, 1925).

cases of general septicemia, of which 28 were cured, 8 markedly improved and 18 died; 8 cases of pneumonia with 16 recoveries and 2 deaths; 8 cases of erysipelas, of whom all recovered promptly.

A report has recently reached us of 23 cases of pneumonia in children treated with mercurochrome with a mortality of 8.5 percent and an average illness of 6.5 days, compared with 23 control cases, treated by the usual methods with a mortality of 39 percent and an average illness of 16.5 days.

The series also contains a number of cases of arthritis of various varieties; surgical sepsis; typhoid and typhoid carriers; osteomyelitis; and cellulitis, in which the results have been favorable and sometimes very striking.

In several cases of extensive furunculosis and one of phagedenic ulcer of the penis, as well as in the erysipelas cases, the occular demonstration of improvement has been marked and convincing.

In typical cases there is a prompt and sharp febrile reaction, with an equally prompt and sharp fall to normal.

Stomatitis is variable in occurrence and severity, as it is following the administration of other mercurials.

Even in full doses mercurochrome does not cause nephritis. Where this result has been reported, it was probably due to the sepsis rather than to the drug.

The field of Chemotherapy is constantly widening and, in mercurochrome, we seem to have a substance which is able to produce profound changes in the organism in infections of various kinds.

WRAPPING PAPER WILL PROTECT AGAINST MOTHS

To protect clothing against moths, any ordinary, strong wrapping paper, or even several thicknesses of newspaper, is just as satisfactory as the socalled moth-proof bags that appear on the market, says Prof. Louis Gershenfeld, Philadelphia bacteriologist, who is writing a series of articles on "Ridding the Household of Insect Pests", in *Hygeia*.

Most of these moth-proof bags have an odor of tar or some other volatile agent, says Professor Gershenfeld. These agents have no distinct advantage other than the imparting of an odor in the closet or storage room. A strong wrapping paper is just as good protection.

Moths do not eat paper to get into clothing, carpets or articles that are wrapped tightly. Care must be observed that bags or other wrappings are not torn or unsealed, and that the folds are bent back, otherwise moths may find their way into the bundle.

Paper bags or tight wrappings do not kill moths. It is, therefore, necessary to be sure that all articles stored away are first freed of moths and their larvae.—Bull. *Chicago Med. Soc.*, June 27, 1925.

SYNERGISTIC ANALGESIA IN LABOR

In recent years, there has been a strong effort made to find a method of comparative relief from the pain of child birth that would not be harmful to the mother or child and that would not hinder the natural progress of uterine muscular effort.

Many different methods have been devised, some of which have been very helpful and some have produced very disastrous results.

To be nearest to a practical ideal, it seems to me that the drugs for such a purpose should be administered by mouth or through the respiratory apparatus and that the most effective element should at all times be under control and be withdrawn quickly when there is no further occasion for its use.

I, therefore, recommend the use of barbital or barbital-sodium, orally, combined with sufficient doses of paraldehyde to produce the desired effect. Of course, this is to be used only in cases where the chemistry of the body seems to be normal. I have never given this combination in abnormal conditions like eclampsia, etc.

When labor pains begin to be effective, I give barbital, 5 grains, and repeat the dose once in about three hours while the patient is up and walking about. When the pains begin to be very severe, I give 2 to 4 drams (8 to 16 Cc.) paraldehyde, depending upon the case and the condition of the patient.

There is only one disadvantage in giving paraldehyde and that is the unpleasant odor; but, if taken quickly with a little water, very few patients complain of this at such a time.

Much of this unpleasantness can be avoided by giving it in the following prescription:

℞—Paraldehyde	10.00
Alcohol (90%)	45.00
Tinct. Vanillae	2.00
Aq. dist.	30.00
Syrup. Simp, qs. ad	120.00

M. et. Sig.—A tablespoonful contains 1.2 Cc. of paraldehyde.

Paraldehyde has no depressing effect upon the heart or kidneys and produces a very rapid but brief somnolence, while barbital is much slower and decidedly more lasting in its effect.

When the labor pains become decidedly effective, I administer a very small amount of ether by the mask or, if ether can not be used, then chloroform, in drop doses, is substituted. There is this advantage of the combination, only very little ether or chloroform is required when the pains are very severe. After a little experience with this combination, one can get excellent results and absolutely no harmful effects are encountered on account of these drugs.

No opiate or opium derivative is necessary to relieve the pain, as this combination completely and effectively puts the higher brain at rest. There is no depressing effect upon the respiratory organs of the baby which act normally at birth. So very little ether or chloroform is given that there are no untoward effects.

The great advantages are:

1.—There are no cumbersome tanks of gas to carry around.

2.—No medicinal enemata need be given, timed or guessed at (due to the fact that rectal absorption is not uniform).

3.—The patient receives no unusual impressions to annoy or worry her during her labor.

JOHN H. THOMSEN,

Omaha, Nebr.

OPPORTUNITY FOR THE COUNTRY DOCTOR

I blame our present method of teaching for the dearth of doctors in rural communities. The way our medical students are taught today, they think they can not treat, or operate on a patient in the patient's house or in the doctor's office, but the patient must be in a hospital, where all laboratory tests can be made, and good nursing may be had.

There never has been a time since the history of medicine began, when the opportunity was so favorable for a sensible M.D., in the small town, as it is now—a doctor who can do his own laboratory work (or keep a laboratory man or woman for that purpose) and operate upon his own patients. Right now, I know of a very few who have sense enough to stay in the country and do their own work, and they are doing a large practice and, being in a small town, are saving their money. They are the doctors who always have plenty of money to meet their expenses, and also a good bank account, often being members of the board of directors. The craze seems to get near a hospital or to specialize in the city.

A. M. EAREL, M.D., Hoopeston, Ill.

SUNSHINE AND CACTOID AS TONICS

In the mountains, as well as on the plains, nature very readily opens up her secrets of health to the physician who studies his physiology and his therapeutics with an open mind. Sunshine, open air and spring water possess a superabundance of healing power and, with a little aid from the loyal physician, they will work wonders in correcting abnormal conditions in the human body.

During the summer of 1921, I began a series of experiments in this connection. These experiments are still going on and they will be continued further. Following is a brief summary of some of the results:

About the 16th of July, 1921, I started to work in the harvest fields of Colorado, and continued the work for three weeks. During this time, as I wore no hat, my face, neck and forehead became severely sunburned. The skin peeled off and burned again, three times in the three weeks. The pain was so severe that if the farmer had not been depending upon me as a hand, I should have given up the experiment and gone into the shade. As it was, I stayed, and learned one of nature's secrets.

The part that will probably interest others most is this:

Owing to the slight degree of sickness caused by the burns, I limited my food somewhat in quantity, but, with the aid of cactoid pellets, one every three hours, my strength kept up, and I did a man's work. At the end of three weeks, my weight was just where it had been at the start.

I should say here that, in 1918, typhoid fever left me with a typical case of myocarditis, and ever since that time my heart has been practically a perfect barometer of my physical condition.

In the summer of 1922, I went to the mountains to assist in building cabins. This work lasted six weeks. (No sunburns this time, although the sun shines hotter than on the plains).

Here my food ingestion was altogether under my own control. Besides a regularly measured amount of other foods, my chief diet consisted of uncooked oatmeal and raw eggs (all measured). After three weeks, I started taking the cactoid pellets. The oats were cut down one-third in amount, and the eggs one-fourth. My weight fell off a little, for a few days, then came back exactly to the mark. Cactus again receives most of the credit. Of course, another factor that entered definitely into these experiments was the sunshine.

These experiments have continued through each summer, under slightly varying conditions, but it will probably be better to condense this report and say that, while either cactus or sunshine alone will keep up bodily weight, even when the amount of food is considerably reduced, together they not only keep up weight but they also raise the strength of a heart patient to a far higher plane than can be maintained with either one omitted.

Moreover, the tone of the whole organism is so different when these agents are presented regularly that the joy of living, for one who has ever experienced the feeling of oppression in the cardiac region which comes from enfeebled heart action, is beyond expression in mere words.

My experiments have covered extended periods of time in Iowa, Illinois, Michigan and Utah; but, prior to 1921, they were not so minutely gauged. However, this can be said in a general way that, while the sunshine is not so bright in the Mississippi valley as in the mountain region, the difference is probably all made up by the fact that, with the body exposed to the sunshine for a time each day during exercise, the beneficial effect of perspiration is greater.

FRANK S. HANNEN.

Greeley, Colo.

VACCINATION, HOOKWORM AND PYORRHEA IN INDIA

I enjoy your excellent journal. I noted in one number the mention of vaccination and, as I was at the time carrying on a crusade against smallpox, I was interested in reading of it in my Native Land.

India is visited, about every "cold weather", by a more or less severe epidemic of smallpox. This year it was unusually severe and unusually virulent. The papers reported 300 deaths in 400 cases during one week, and another week there were no recoveries. So I started in to vaccinate, and in all must have done over 700. Many of these were aboriginals in a mission school; fine stalwart young men, in splendid physical condition.

I was interested in noting the difference in the texture of the skins. I thought the boys, who for generations back, had lived an outdoor life and been exposed to wind and rain, would surely have tough skins, and began my vaccination on that basis. I found out my mistake very soon, for the skins were like tissue paper—fine and soft. Some who seemed to have been more sheltered, with fair and apparently delicate skins, were so tough I had to use some force before making any impression on them.

In vaccinating, I began in the old way, making many parallel scratches, and then carefully crossing them. We used up all the first supply of lymph, and I went up to Calcutta myself as the quickest and surest way of getting another supply. The Head of the Department gave me all I wanted, and told me that the second time of scratching was quite unnecessary, and that fewer scratches were quite as useful as the many. This simplified the subsequent vaccinations.

I found that Mohammedans usually refuse vaccination. It was a Mohammedan boy who brought the smallpox to the village where there is a large mission community; and it was a Mohammedan who brought it in another year and started an epidemic in which we lost some of our people. I felt as if compulsory vaccination ought to be made the law of the country. If the Mohammedans prefer this death that is no reason why they should inflict the loathsome disease on those who prefer to live and keep well.

Most of the vaccinations, so far as heard from, were successful, and we have heard of no smallpox. I did two on each left arm. We got the lymph in little tubes, which were supposed to suffice for eight or ten, but I used it more sparingly and did, sometimes, as many as twenty. I did not see that the lesser amount was less useful than when more was used.

I did some physical examinations in the mission school, and found many of the boys

and some of the girls had what I took to be the beginnings of pyorrhea. It begins in the lower jaw. The gum recedes from the two lower middle incisors and later becomes red and spongy. Then it spreads to the other roots until, in some cases, several are involved. This seemed to me quite unexpected, as the pupils were apparently in good health. As it goes on, the gums recede from the roots of the teeth, and then the teeth loosen and fall out or have to be pulled. I would be grateful for any suggestions as to the cause of this so common condition, and the remedy.

Some have suggested that the condition is caused by excessive chewing of "pahn", a universal practice among the people. This "pahn" is made up of betel nut, cut in thin slices, lime and gum kino wrapped up in the juicy leaf of the "pahn". Sometimes spices are added, and sometimes powdered tobacco, and in some parts opium, but these are not essential. The chewing of "pahn" may be one cause of pyorrhea, but it cannot be the only reason, for many who do not use it have the spongy receding gums.

I found conjunctivitis in various degrees rather common. I thought this might be due, partly at least, to the way the boys do their studying in the evening, several gathering around a lantern and studying until late at night by this light. Some boys had little open oil lamps. The oil used is one of the very cheap grades. It gives a yellow flame, not very bright. I, of course, suggested better lighting, and rigid rules about going to bed early with lights out.

I was not satisfied that these things were altogether responsible, for among the girls, who go to bed comparatively early, and have perhaps better lighting, I found some inflamed conjunctivae. I would be grateful for any suggestion as to cause and remedy.

Hookworm is said to be very prevalent in Bengal. I have used thymol for this, but it was not satisfactory (as far as I was concerned, at least) for the administering meant too much work and too much dieting, etc. Later I heard of an oil which was good, and got some, but on asking about it, was told of so many dangers from its use that I never had the courage to use it.

I cannot recall where I heard of carbon tetrachloride as the best remedy yet discovered. None of my books mention it but I ventured to get some, and have used it in a good many suspected cases, and have had no untoward effects. I would be glad of any suggestions along this line. I have recently been transferred to Bengal where hookworm is said to be extensively prevalent. I do not do microscopic work, but I resolved to start in on all cases where there is even a little debility, with the prescribed treatment for hookworm, following this by the indicated remedies.

Just at the moment, I am having a delightful holiday in a popular hill station, Naini Tal, in the United Provinces. Our house is 7,300 feet above sea level. This seems to be quite too high for several of the party. A little boy who is here for his health and for the excellent American school, has lost in weight and general condition since coming up, and others have suffered in other ways. What is considered a good altitude that would suit all? Of course, out here we have to consider temperature as well as altitude, but the latter is more important.

Do any of your readers use castor oil emulsion for simple diarrheas, especially of children? I have some diffidence in mentioning this, for it is such a very simple remedy, but like many other simple remedies it is useful.

Some years ago, in a medical journal, I found a paste of chalk and brandy recommended for quickly and comfortably drying up the milk. Belladonna is so dirty and so slow, and bandaging so unsatisfactory, that I was glad to hear of so simple and clean a remedy. It proved quite satisfactory. Latterly I have used it with some success for caked breasts, and tried it in other inflammations, but is it most satisfactory of all for drying up the milk. Sometimes one application suffices, sometimes two or three are necessary.

MARY W. BACHELER
Midnapore, Bengal, India.

TURPENTINE AS A TETANUS PROPHYLACTIC

In the fall of 1920, I came to Mexico to take charge of the field medical work of one of the largest oil companies operating in the Tampico district.

In talking with my predecessor, I learned that requisitions for medical supplies had to be passed by the General Manager and that he was very ready with the blue pencil; in fact, he limited the supplies to just what *he* thought the Medical Department ought to use, and while he knew the oil game, his knowledge of medicine was nil, so requisitions for serums and expensive med-

icines were only waste of time and good paper.

I had learned to believe in the value of some serums, especially tetanus antitoxin. As the work in that section was mostly construction, and Mexican *peons* were the laborers, injured hands and feet were quite common and nail punctures seemed to be the order of the day. Past experience had taught me that nail punctures and tetanus were almost synonymous, and that a case of tetanus was a hard thing to handle, and best treated by prevention with antitetanic serum, which was out of the question at that time.

I then happened to remember that, when I was a boy, turpentine (the older, the better) was what the country people used for wound dressings, and that lockjaw was unheard of among them.

As all who have lived in this country well know, the average *peon* is not only dirty but absolutely filthy; that to him the use of soap and water will *hace dano*, and that it is strictly against all his ideals to wash either hands or feet. It seemed to be "up to" me to find, devise or create some antiseptic dressing that would penetrate the accumulated dirt of years, and at the same time be fatal to tetanus germs; so I began using turpentine.

In going over my case records for the past five years, I find that I have treated over one thousand cases of wounds, ranging from simple abrasions to punctured lacerations of hands and feet, and that turpentine was the dressing used. Not once have I had to write a diagnosis of tetanus as a result, nor as a complication.

Of course, turpentine is not recommended as a substitute for tetanus antitoxin when that can be had, but when it is not available the old-fashioned remedy is worth trying.

I. P. ISRAEL,

La Quemada, Mexico.

SUMMARY OF CATHARTICS

For a single evacuation, at the beginning of an infectious fever, at the onset of labor or before surgical operations, etc.; castor oil; magnesium sulphate, effervescent; magnesium citrate.

In the presence of nausea or vomiting: calomel; magnesium oxide; rhubarb and soda.

In the presence of coma: croton oil.

For children: Aromatic fluid extract of cascara; syrup of senna; compound licorice powder; phenolphthalein; calomel.

For the insane: phenolphthalein; syrup of senna.

For chronic spastic constipation: bran, but preferably agar and petrolatum, because it can be made palatable given in the form of food.

For chronic atonic constipation: fluidextract of cascara sagrada.

For occasional use: Hinckle's pills; aloin pills, such as Lady Webster's Dinner Pills; phenolphthalein.

To remove dropsy: salts; camboge; colocynth; jalap; elaterium.

Cathartics, which given a nursing mother will purge the baby: Aloes, particularly; all vegetable cathartics, somewhat; salts, very slightly.

Cathartics which can cause poisoning: calomel, podophyllin, phenolphthalein; croton oil; magnesium sulphate.

For hypodermic use for cathartic effect: phenoltethrachlorphthalein, dose: 0.4 grains. —CLENDENING.

(From *Progressive Medicine.*)

A CORRECTION

On page 403, of the June number of CLINICAL MEDICINE, we made Dr. Humphrey say that he injected half an *ounce* of argyrol solution into the urethra every other night. This should have read half a *dram*.

The Leisure Hour

Conducted by GEORGE H. CANDLER

Rhesus Sardonicus

(Fraternally dedicated to the present "Head of the Herd")

EONS ago, a Howling Ape met a cute Chimpanzee;
They mated, lived on nuts*, and were as happy as could be.

Their progeny, a likely lot, played tag with young baboons
And leaped, with Lemurs, thro' the woods round tropical lagoons.

From them there sprang another strain, and learned men direct us
To call this link, in *rhesus* chain, *R. Australis erectus.***

The most erect one of this lot—prognathous "lady-killer"—
Went out and captured, one fine night, a virginal gorilla!

She proved prolific, and her strain improved as on it ran
Till lo! At last, there was produced Neanderthalian *man.*

This ugly gent acquired brides (you'd think his mug would scare 'em!)
And, in some cavern dark, maintained a really heinous harem.

Now Evolution "ev'd" apace; tails shortened, foreheads grew,
Till finally these creatures *looked* decidedly like *you!*

Monkey or man, sapient or dumb, they were, *are* and shall be—
Witness the GREAT "HOME-COMING WEEK" at Dayton, Tennessee!***

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* "No nuts—no monkeys; no monkeys—no nuts." (Rhesian proverb, revised to suit the modernist.)
** Or something like that. Accuracy is not essential in these minor matters.
*** If that doesn't settle the "origin of man" (some of him at least), what will?

G. H. C.

"Speaking of Ancestors"

THERE *was* a time when I "pointed with pride" to my ancestors. Now, alack! I view the many-branched genealogical tree—provided and carefully pruned by the revered College of Heralds—with distinct alarm! I am almost inclined to envy the prosaic individual who assured me once that "ancestors were the bunk—*he* hadn't any". Little did he wot, of course, that he was the product of a single cell or that probably many of those who came before in his direct line had temporarily inhabited cells also. Such ignorance, of course, is to be preferred to the blighting knowledge that some selfish, old progenitor was *hung* for sheep-stealing or other similarly silly peccadillo.

It is obvious that a man who would steal a sheep and get hung for doing so was mentally unsound, or still dominated by primordial principles. To "drive off flocks and herds" as *my* ancestors did *and get away with it*, proves very conclusively the theory that "the fittest survive." That is why I am here now. That perhaps (mind you, I say *perhaps*) is why *you* are here too! Of course, you may be one of those "exceptions which prove the rule", so don't get too chesty! Of course, I can't know anything about, for, or against *your* ancestors, though it is quite possible that your great grandsire, one hundred times removed, may have smote mine over the "dome" with a stone, club, battle-axe, bill or claymore. If he did (and got away with it) he doubtless was justified. If he got "translated" by so doing, he was distinctly in error, and you must watch your step and not allow inherited instincts to lead you too far.

We all are, you know, very much what our ancestors as a whole have made us. When some of us reflect deeply upon this subject, we wonder what kind of a job-lot of half-wits these ancestors were. Those not given to reflection may be satisfied with their model, but even the most complaisant must admit there could, indeed *must*, be great future improvements.

It is a deplorable fact that the history of one's family—if he has one—runs in the male line. Not much is said about the females of the species. They were "daughters of so-and-so", "had issue", and finally became "relics of" somebody, and passed into the dower-house to see the wives of eldest sons reigning in their stead.

When one questions evolution, there it is! If you are still uncertain about it, look at an infant sprawling on its tummy, and only after months of effort gaining an insecure foothold erect. Then follow him to the football field, then through a vigorous middle-age into senility and know that all things (*some* very undesirable ones too) come about through change. Are Great Grandma and the slim, pink-and-white belle of nine decades ago one and the same? Are even the microorganisms she supported, unwittingly or unwillingly, the same strain? The change, of course, has been gradual, and you and others have become used to regarding a changing individual as the same person—but, as a matter of fact, physically, mentally or spiritually no one *remains* the same. They are John or Mary, the descendants of Thomas and Martha it is true, but the eight-month old boy or girl, the eighteen-year-old youth or maiden, and the eighty-year-old man or woman are not the *same*, though each evolved from the other and all in turn evolved from something else.

Probably we shall never *know* just what we all originated from and, as far as I am concerned, I don't care a hoot! But, I daily thank what gods there be for having evoluted *some*, anyhow. The thing I give most attention to is avoiding emulating the crab and proceeding backwards! One naturally has to reason either from personal experience or "information received." Some people don't reason in hot weather—it fatigues them—and, in the cold season, they are too busy keeping warm to think. It consumes vitality. We will charitably assume that they have evoluted unevenly and let it go at that.

But, being compelled to think, even in July (if I don't think a little bit I don't eat, and I object to fasting, upon humanitarian grounds), I have considered my ancestors, and I find that in 1066 (that is where I first get a real hold on the rascals), a husky old chap named Richard—"Grandpa Dick", we call him affectionately—went over with William of Normandy to Perfidious Albion (she wasn't known as "perfidious" then), who, after killing off a whole lot of Britishers and being generally rude and over-bearing or performing "various doughty and knightly deeds", as you prefer, took possession of that Isle of the Free and pro-

ceeded to divide it up to suit himself. William, the First (Bill of Normandy) gave Richard (Grandpa Dick), "for services rendered the Crown" with sword, axe and mace, a very fair domain in East Anglia. That the Thane, who hitherto had owned a great part of it, objected seriously to such invasion of his territory, mattered nothing. "To the Victors Belong the Spoils." Aye, even to this day! Therefore, the French pushed out the Saxon, but promptly intermarried with his daughters (the East Anglian maidens were *some* peaches), and so a new people were formed. What Richard took, Richard's descendants held, and even to this moment, they walk welcome where he strode as a hated conqueror. But, French and Saxon bloods have mingled kindly and the much lauded Englishman is the result.

That is how nations are evolved. What *I* am is not only more or less the sum of what straight-French "Grandpa Dick" and his sons were, but what their more or less untamed forbears were also. If nine hundred years ago my particular ancestors were able to go out and by force of arms take what they wanted, what is it that keeps me from doing the same thing? Partly the police and partly moral inhibition! What is the difference between my escutcheon and that of the individual whose ancestor was hung for stealing a sheep? Well, mine is minus the gibbet taint, which shows that, nine hundred years ago, anyhow, my strain knew at least that "big business" is laudable—petty pilfering reprehensible! The man who "owns things" cannot possibly permit others less fortunate to appropriate loose and unconsidered trifles to his own uses. What is the advantage of owning things—especially, after acquiring them by means accompanied by grave risk to one's person—if some sly but unvaliant rogue is to garner some of them at night—or at any time—by stealth? Tradition has it that the Thane whose youngest daughter Grandpa Dick's eldest son married (a sane and satisfactory arrangement) had stoutly held his lands against several Danish invaders, as had his father before him; but just how it originally came into the family's possession no one seems to know. They *had* it, they have it still; isn't that enough for any sane man to ask? That most of the sod has been drenched with blood—native and alien—should mean something. It does! It means that the strongest always won, and this superior strength has not always been of the physical variety. For at least five hundred years it required a nimble brain to keep on the right side and, as Kings came and went, to make allegiance to and fight for the right side. One evolutes fast under such circumstances—or ceases to be.

Some very great rogues have achieved great successes. Some very brave, intelligent and honorable men have died dismal deaths or lived miserable lives, and I am forced to confess that any family which has held great estates intact through the centuries must have embraced both varieties. Still, it is only so that *Traditions* come, and he who has no traditions to guide him is indeed at sea! Even if that tradition started as "Get it", it must ultimately have progressed to "Hold it" and, as society became more and more addicted to decency, those who *held* must certainly have become conspicuously "proper" or they would have lost out.

Ancestral traits are in us all. A strain of physical cowardice for instance will persist, despite various injections of new blood through many generations; even as some bodily peculiarity will make itself evident in the tenth or twentieth generation of straight stock. Therefore, if one's ancestors have been desirable citizens ("good people") for a few hundred years, it is not difficult to follow in their footsteps; but if one should by misfortune have a bad ancestry and still, through a combination of circumstances, find himself possessed of wealth and power, it is *not* so easy to make good. We have, in this country at this particular time, a very great host of individuals who have no ancestry that is traceable (or a very undesirable family tree) and they are acquiring, with extreme suddenness, great wealth and power. The use they are making of this is not in every case what may be termed "proper", and their intellectual development naturally has not kept pace with their financial progress. As a result we, socially, are still in what may be termed a seething stage—the pot is boiling, but the character of the ultimate broth is somewhat problematical.

The rising generation, taken as a whole, is much better informed (about some things) than their parents were, are or ever will be, and as our own ancestors were unquestionably, deplorably ignorant ("Grandpa Dick" could only "make his mark" and feared witches) so, our grandchildren will regard us as "know-nothings" of the worst sort. We indeed evolute, and, to the fables,

fantasies and faiths which held in the past and which we have (more or less) outgrown, will be added many of our own present pet beliefs.

My ancestors—and yours—burnt men at the stake or hung them in chains for holding opinions differing from their own, and some of them cheerfully died for their own beliefs. There was not much tolerance when only a few men had control of knowledge. What you were taught you accepted without question and upheld both Church and State as infallible. Evolution has changed all that; men, *really* educated, form their own opinions and change them as the evidence for or against distinctly preponderates. People with the three R's, or a trifle more erudition, either "follow the leader" in the good old style and keep alive sects and creeds which should be obsolete, or go off half-cocked at mental tangents and perpetrate absurdities which would make one laugh, did they not so often produce dire results.

Today, perhaps, as never before, we have to contend (1) with bigotry; (2) with bizarre reasoning; and (3) disbelief in everything but the obvious. Those of us who admit having had ancestors are inclined to believe that what is going on now is just what has been going on more or less actively for a very long time, and therefore have no particular fear for the future. It would perhaps be uncomfortable for *us* should we linger unduly, but Time irons out the road for those who must tread it.

What my ancestors and yours did for us, we must do for our descendants, i.e., leave the world a little bit better than it was when we came into it. Mortal man can do no more. If we cannot all leave material wealth, we can leave a decent example and add something to accumulated knowledge. Those who would in any way hinder the acquirement of the latter are uselessly combating an irresistible force — Evolution. She, remember, is "a *very* old lady", but even so, her activity is wonderful and her ultimate destination—if such there be—still a very long way off.

All in all, I take it that we should be glad we had ancestors but not bother about the earlier ones too much, rejoice that we shall leave descendants, yet not worry excessively about how they will live; and so live ourselves that when, far in the future, the family tree is investigated, we may not, figuratively speaking of course, be found in the "sheep-stealing", dumb class.

Fundamentally, we *must* be Evolutionists —even the funny Fundamentalists are that! They are subject to the immutable Law of Change, and whether they like it or not, are the product of Evolution and must themselves evolute. Those who have been born, have lived beyond infancy and have gained intelligence enough to know they must *die*, surely should be ardent Evolutionists. Understanding Nature's plan alone can make the last great change (for us) the "Great Adventure!"

Diagnostic Pointers

A SIMPLE QUANTITATIVE TEST OF GASTRIC ACIDITY

Take two strips of gauze, four or five centimeters long by one centimeter wide. Dip one strip in a 0.5-percent solution of Congo-red and the other in a 0.5-percent solution of dimethylaminoazobenzene. Fasten a long thread (70 Cm.) to the two strips and pack the strips into a gelatin capsule; pass the free end of the thread through the cap of the capsule with the aid of a needle, then close the capsule with the cap and have the patient swallow it an hour after a test breakfast. When the capsule has dissolved, the strips of gauze are to be drawn out by means of the thread, and the tint of the strips will indicate the acidity of the stomach contents.

The Congo-red will indicate, roughly, the quantity of free and combined HC1, being blue at an acid concentration of PH 3 and red at PH 5. Various shades of lilac and violet indicate acidities between these figures and must be judged by observation.

The dimethylaminoazobenzene indicates free HC1, and is red at PH 2.9 and yellow at PH 4.

A little practice will enable one to make reasonably accurate estimations by this method.

Adapted from Aaron's "Diseases of the Digestive Organs".

CANCER

Among our native Indians, cancer is very seldom met with among those of pure blood; in South America, cancer of the breast is practically unknown among native women. —*Urol. & Cut. Rev.*

COAGULATION TIME

A simple method for determining the coagulation time of the blood is as follows:

1.—From a piece of soft glass tubing, draw out, over the flame, a fine, capillary tube about 6 inches long.

2.—Puncture the patient's finger or ear with a sterile needle and touch the drop of blood with one end of the capillary tube, letting the blood run up as far as it will and noting the time accurately.

3.—With fine forceps, break off about 1-4 inch of the blood-filled tube every 20 to 30 seconds, carefully noting the time when a thread of fibrin appears between the fragments at the break. This is approximately the coagulation time for that patient.—ARMY PRACTICE.

HOARSENESS

In a case of hoarseness without acute symtoms which does not *promptly* respond to usual treatment, consider and look for syphilis, tuberculosis or malignancy.

LUNG ABSCESSES

Lung abscesses are commonest after nose and throat operations, and this is an argument against using general anesthesia in adults in these cases.—DR. A. E. GREER, of Houston, Texas.

FACIAL TYPES AND DISEASE

Persons with a tendency to pernicious anemia have wide, short faces, wide jaw angles and eyes wide apart; those tending to gall-bladder disease are narrower in the jaws and between the eyes. Long, narrow faces are found in those tending to tuberculosis and nephritis, but in the former the eyes are closer together.

The gastric-ulcer type is intermediate in all ways.—DRS. DRAPER, DUNN and SEEGAL, in *Am. J. Med. Sc.*

NASAL DIPHTHERIA

All cases of severe rhinitis, especially if unilateral, should be cultured for Klebs-Löffler bacilli. Many cases of nasal diphtheria are now overlooked.—DR. J. D. IAMS, in *Atlantic Med. Jour.*

INFECTIVE ENDOCARDITIS

In subacute, infective endocarditis, due to Streptococcus viridans, petechiae in the conjunctiva are frequently seen.

DR. MORRIS LEWISOHN.

CHRONIC DIARRHEA

Socalled chronic diarrhea, with stools consisting largely of mucus, blood and pus, is always serious and calls for an exhaustive examination to determine the cause.

It may be due to cancer, tuberculosis or syphilis of the intestinal tract, or to infestations with intestinal parasites or simple, infectious, ulcerative colitus or proctitis.

An examination of the bowel contents is just as essential in chronic diarrhea as is a uranalysis in nephritis or a sputum examination in tuberculosis.—Dr. Wells Teachnor, Sr., of Columbus, O.

URANALYSIS

If a single specimen of urine is to be examined, it is better to take one passed during the day, rather than that first voided in the morning, as it gives a better index of the kidney's reaction to the activities of life.—Dr. James P. O'Hare, of Boston.

CHRONIC NEPHRITIS

The constant finding of a *night* 12-hour volume of urine that is more than one-third of the total 24-hour volume is evidence in favor of chronic nephritis, provided the patient does not take most of his daily fluids in the evening.—Dr. James P. O'Hare, of Boston.

HUTCHINSON'S TEETH

Do not diagnose as Hutchinson's teeth all those incisors which have notches along the free edge. The teeth which are diagnostic of congenital syphilis are small, short, irregularly spaced and have a *single*, more or less crescentic notch in the center of the free edge.—Dr. I. C. Sutton in *A. J. of Syph.*

CONDYLOMATA LATA OF SYPHILIS

Syphilitic condylomata may be present, not only about the genital organs and the anus but around the alae of the nose, at the corners of the mouth, around the navel, under the breasts, in the axillae and even between the toes.—Dr. Herman Goodman, of N. Y. City.

ENLARGED LYMPH NODES

Every group of inflamed or hypertrophied lymph nodes is a guide to some local infection. If these are in the neck, the infection may be in the scalp, face, nose, throat, pharynx, tonsils, or mouth.—Dr. J. Epstein, of Beth Israel Hosp., New York.

PITUITARY DYSFUNCTION

The necessity for careful diagnosis in cases of suspected pituitary dysfunction, prior to treatment, should be strongly emphasized. Even among carefully selected cases, sent to us by competent observers as being of pituitary origin, one out of every four was found not to be an endocrine condition of any kind.—Drs. Rowe and Lawrence, of Boston.

HYPERTHYROIDISM AND TUBERCULOSIS

Mild hypethyroidism frequently simulates early tuberculosis.

Dr. Morris Lewisohn.

WHEN TO OPERATE

When the surgeon feels sure that, were he in the same condition as the patient, he would want the operation he proposes to perform done upon himself, then, and not before, is the time to operate.—Dr. Park W. Willis, of Seattle, Wash.

PERFORATION WITH FREE FLUID IN BELLY

If, in connection with other suggestive symptoms, a patient complains of a heavy, boring or burning pain in the side of the neck or over the acromioclavicular joint, the diagnosis of a ruptured viscus, with free fluid in the belly in confirmed and immediate operation is indicated.—Dr. F. F. McCauley, in *N. Y. St. J. of Med.*

DIABETES INSIPIDUS

Csepai Tests.

In normal persons, one drop of pituitrin 1:1000, will cause blanching of the conjunctiva for from 3 to 6 minutes; and the hypodermic injection of 1 Cc. of the same solution will cause the systolic blood pressure to increase from 5 to 38 mm. In persons with diabetes insipidus, no conjunctival blanching occurs, and the blood pressure remains stationary or falls following injection.—A. T. Cameron, Univ. of Manitoba.

HIGH BLOOD PRESSURE

The higher the blood pressure above the average, the greater the mortality above the normal.—Arthur Hunter, Chief Actuary, New York Life Insurance Company.

PARESIS

When a man past 40 *begins* to forget the little niceties of gentlemanly behavior and the finer points of ethics and morality which have been customary to him for years, do not forget that "little" lapses are important and do not commence during the forties without some serious reason. Sus-

pect paresis and examine the pupils, reflexes, blood and spinal fluid *at once*.

DR. GIVEN CAMPBELL, St. Louis.

ACUTE ABDOMINAL CONDITIONS

It should be emphasized that a correct diagnosis in acute intraabdominal conditions can result only from a carefully taken history, accurate observations and a proper interpretation of the symptoms and signs. In the diagnosis of obscure cases a good clinical history is often more valuable than any other factor, because it sheds more light upon the case than even a painstaking physical examination.—DR. HARRY ROTH, N. Y. City.

ACUTE INTESTINAL OBSTRUCTION

1.—Spasmodic pain is almost always produced by palpation; not so in colic.

2.—Shock, with *slow pulse*.

3.—Vomiting (not fecal in early stages).

4.—Flatus (do not be misled if flatus is passed soon after onset).

5.—Auscultation of the abdomen will reveal the characteristic sound of air and fluid moving in a tubular space.

Note: Vomiting; acute spasmodic pain; and early shock should always be considered due to acute obstruction until the contrary is proved.—R. ST. LEGER BROCKMAN, F.R.C.S., in *The Practitioner*.

CASES FOR PSYCHOTHERAPY

In all cases where psychotherapy is to be undertaken, there must be a careful and detailed investigation of the history and symptoms, followed by an exhaustive physical examination. This must *never* be cut short, for in this way only can the patient's confidence be gained and full cooperation secured. Encourage him to state his case in full detail, however wearisome, for so are possible mental reservations swept away.—T. A. HAWKESWORTH, M.B., of Southhampton, Eng.

PITUITARY DYSFUNCTION

In pituitary disorders, ophthalmologic examination will show a temporal contraction of the visual fields and an enlargement of the blind-spot.—DR. A. W. ROWE of Boston.

PELVIC PAIN

1.—Diagnose neurasthenia last of all, after excluding all likely causes of pelvic pain.

2.—Distention of the pelvic colon may cause pelvic pain by mesenteric dragging or by pressure on the ovary.

3.—Always examine first, without an anesthetic, even if you must use one later.

DR. A. E. CHISHOLM, of Dundee, England.

TOXEMIAS OF PREGNANCY

The normal woman gains from 20 to 25 pounds during pregnancy, the increase being gradual and regular. If a pregnant woman suddenly begins to gain a great deal of weight, rapidly, in the last half of pregnancy, it is a danger-signal which calls for the most painstaking physical and laboratory examinations to determine the possible onset of toxemia.—DR. L. M. RANDALL, of the Mayo Clinic.

TACHYCARDIA

A pulse, frequent because of hyperthyroidism, does not increase so much as ten beats per minute when the patient changes from a sitting to a standing posture; while in all other conditions causing tachycardia the change is more than 10 beats per minute.—DR. GIVEN CAMPBELL, of St. Louis.

Current Medical Literature

IMPOTENCY

There is no function of the human body the loss of which causes such consternation to the loser as the sexual function.

Dr. Isaak M. Altshuler, of Detroit, considers the subject of impotency in a very interesting manner in the *Urol. & Cutan. Rev.*, for May 1925.

Dr. Altshuler feels that, excluding those forms which are due to organic disease of the central nervous system (such as paresis and tabes), all cases of impotency are psychic in character and are to be handled on that basis. He feels that to treat an impotent man by the use of drugs or other physical means only confirms him in the idea that there is some physical derangment, and so aggravates the trouble.

The doctor enlarges upon the fact that there are, today, two forces in constant discord in this field: the primal and inborn instinct urging us to sexual gratification; and the acquired, conventional limitations, imposed by our environment, which, to a large extent, condition our reflexes.

A sound potency must be free from any hindrances, and the lack of it is due in large measure, to our acquired habits of checking thoughts which are incompatible with time and circumstances. It is thus clear why a man who fears a syphilitic infection may be impotent with a prostitute but fully potent with his wife.

Too little attention is given to the fact that libido is more a psychic than a physical process; and that coitus is the culmination of a more or less long and complicated process of *courtship* and is frequently impossible unless this process has been adequately carried out.

There must be a keen desire for union with the particular sexual object involved, and the true, underlying cause of all divorces is coolness or inability to love on the part of one or both of the partners. If love had been the only excuse for every coitus and for every marriage, impotency would be rare, indeed.

Sexual excesses of various kinds have frequently been blamed for loss of potency, but this is not borne out by a careful study of the facts. Impotency (other than the true organic forms) is the result of a misunderstanding between the requirements of civilization and the instincts, and a lack of appreciation of the psychic and spiritual forces involved in and underlying the act of sexual union.

"HAY FEVER" DUE TO ORRIS ROOT

Hay fever in its proper time and place is bad enough, but, when it lasts throughout the year, it is unendurable.

Dr. E. M. Robinson, of Brooklyn, reports, in *Med. Jour. & Rec.*, for May 6, 1925, eight cases of perennial vasomotor rhinitis in which the offending protein was found, by skin tests and therapeutic trial, to be orris root, a substance now so widely used in perfumes, shampoos and other toilet preparations as to be well nigh universally present.

Seven of these patients were relieved of their distressing symptoms by desensitizing them to orris root in the manner usually employed with other foreign proteins, such as the pollens.

CHRONIC SEPSIS AND INSANITY

The work which has been done in the New Jersey State Hospital for the Insane, at Trenton, by its Medical Director, Dr. Henry A. Cotton, in the treatment of the socalled functional insanities, by eliminating foci of infection, is extremely interesting and may prove to be an epoch-making advance in the management of these disorders.

In discussing his work in the *Practitioner* (London) for May, 1925, Dr. Cotton suggests that, as the mind functions only through the structure of the brain, it seems rather foolish to declare, as some still do, that, in dementia præcox, manic depressive insanity and the psychoneuroses, there is no change in the brain structure. This conclusion seems especially far-fetched when we remember that, in the alcoholic psychoses, paresis, and the arteriosclerotic dementias of old age, there is a well-recognized toxic factor and definite cerebral lesions are found.

Reasoning from analogy, and fortifying this reasoning by the results of clinical observation, Dr. Cotton is convinced that most, if not all, of the idiopathic or functional psychoses are due to cerebral changes produced by prolonged contact with toxic substances in the blood, generated in chronic septic foci in the teeth, tonsils, urinary tract and, particularly, in the gastrointestinal system.

The search for foci of infection must be very painstaking and complete, as it is useless to eliminate one focus and leave others in full operation.

Many of the cases show chronic colonic stasis, with evidences of toxic absorption. Such were, at first, treated by colectomy, but the mortality was too high to justify the operation. The method now used is to release acquired adhesions or bands which fix and obstruct the colon, as recommended by Lane, and this has given excellent results.

The reports from various hospitals show that the recovery rate for mental cases has been declining and the mortality rate has been slowly rising for a number of years.

At the State Hospital, Trenton, the recovery rate for functional psychoses, prior to 1918, was 38 percent, most of which were socalled manic depressives. Since 1918, with thorough detoxication of these patients and elimination of all foci of infection, the recovery rate has risen to 86 percent, comprising over 1,600 patients. This represents their condition *at this time* (in many instances several years after leaving the hospital).

ANESTHESIA IN GOITER SURGERY

The decision between local and general anesthesia is reaching the point where it is called for in all sorts of surgical work.

Dr. Arnold S. Jackson, of Madison, Wisc., reports in *Anesthesia and Analgesia* for April, 1925, results in 312 goiter operations performed during the past two years. In 298 of these cases, the operation was successfully completed under local anesthesia alone.

Dr. Jackson summarizes the advantages and disadvantages of this method as follows:

Advantages

1.—Little or no additional strain is thrown upon the heart, kidneys, liver or other important organs that may be already severely damaged.

2.—The danger of postoperative hyperthyroidism is reduced to a minimum.

3.—The possibility of injury to the recurrent laryngeal nerve is greatly diminished. If injury does occur, it is possible to detect this at once by conversing with the patient. The removal of a suture or artery clamp may relieve this serious condition.

4.—The danger of postoperative pneumonia is decreased, although not entirely eliminated.

5.—Injury to the tissues is curtailed, since the surgeon must handle them most gently.

6.—There is lessened chance of damage to important structures. If necessary, the surgeon may work slowly and carefully when using local anesthesia.

7.—Fewer cases of postoperative hemorrhage follow local than general anesthesia. If local anesthesia is used, small, undetected bleeding vessels may at once be discovered by having the patient cough at the completion of the operation.

Disadvantages

1.—An added strain is imposed upon the surgeon and in some instances upon the patient. Children, extremely nervous patients, especially if at all neurotic, as well as the severely hyperthyroid type in which the nervous element predominates, should be given a few inhalations of nitrous oxide-oxygen.

2.—In some cases, a few extra minutes are added to the time of operation because the surgeon must proceed more slowly and gently than under general anesthesia.

3.—If too much nocovaine is injected, the tissues may become edematous and the landmarks somewhat obscured.

4.—The nerve block method of anesthesia is not performed without some risk. With the infiltration method mild convulsive seizures may occur when a vessel is injected, but, to my knowledge, this has never resulted fatally.

DENTAL CARIES AND CONSTIPATION

An editorial in the issue of the *Med. Jour. & Rec.*, for May 6, 1925, pointedly calls attention to the fact that decayed teeth and constipation are so universal that they are coming to be considered as regular factors in life.

As a matter of fact, they are not diseases but *symptoms*. What condition underlies them? A deficiency or perversion of the blood stream, due to faulty, ill-considered diet.

Is it not possible that Metchnikoff was more fully right even than he dreamed, and this general vitiation of the entire blood stream by the products of incomplete or perverted intestinal metabolism or the lack of essential elements, rather than the various focal infections for which we search so diligently, is at the bottom of the lack of resistance which permits us to succumb to various disease processes, and is, perhaps, even responsible for the prevalence of cancer?

THE TREATMENT OF SYPHILIS

Dr. T. Latane Driscoll, of Richmond, Va., has given over 240,000 doses of the various arsphenamines, and publishes his conclusions in the *Virginia M. Monthly*, for May, 1925.

Some of his more important and practical suggestions follow:

1.—Arsphenamine is about 40 percent more efficient, and sulpharsphenamine about 20 percent less so, than neoarsphenamine, judged by the Wassermann test and symptoms.

2.—If carefully neutralized, properly diluted and injected slowly, arsphenamine is *less* toxic than the other salts of this group, and becomes still less so if allowed to set for 15 to 20 minutes after alkalinization.

3.—If a relative immunity for one antisyphilitic drug is established, alternate it with one of the others.

4.—Most socalled contraindications for arsenic are really syphilitic in origin.

5.—Sensitized patients (those with nitritoid or anaphylactoid symptoms) are desensitized by neoarsphenamine. After an injection of the neo, one can safely go back to arsphenamine.

6.—The promiscuous giving of arsphenamine without adequate knowledge of syphilis or of the drug is to be deplored.

7.—Under ordinary circumstances, giving large doses of mercury and bismuth while giving the arsenicals is more than the average kidneys or liver can stand.

8.—Jaundice is a condition caused by therapy and not by syphilis. It constitutes a positive contraindication to further arsenical therapy at the time.

9.—One patient in a hundred will have some reactive symptoms. When the morbidity is 4 percent or more, something is wrong with the water, the alkali or the technic.

10.—Do not place too much reliance on any single drug but use all the known remedies as indicated, over long periods, checking results by frequent and careful observations.

MENTAL CONFLICTS AND PHYSICAL SYMPTOMS

Freud and others have popularized the knowledge that hidden or repressed emotional or mental conflicts may be the direct cause, not only of psychic but of physical disease.

In the *Journal of Kansas Med. Soc.*, for February, 1925, Dr. M. S. Gregory develops the thesis, and illustrates it with typical cases, that mental conflicts which are well above the threshold of consciousness and well known to the patients may also give rise to physical symptoms.

The doctor cites one case of a young man who suffered a complete sensory and motor paralysis of his right arm, with loss of the pharyngeal and conjunctival reflexes, apparently as a result of a very trivial accident. After a long period of physical treatment, which produced no result, a psychic cause was sought and the patient at last admitted that, two years before, he had impregnated a girl and deserted her. *Immediately* upon his taking steps to right the wrong he had done, so far as possible, all his physical symptoms disappeared.

ETHYLENE

Ethylene is one of the newer general anesthetics, having been introduced in 1922, but already there is a rather extensive literature on its use, which is quite fully reviewed by Dr. L. F. Sise, anesthetist to the Lahey Clinic, Boston, in the *Boston M. & S. J.*, for Feb. 12, 1925.

Clinically, it stands between ether and nitrous oxide, but nearer the latter than the former. The relaxation produced is more than that with nitrous oxide, but much less than with ether; and the danger of overdosage is much greater than with ether, standing close to nitrous oxide in this respect. This anesthetic *can not be "pushed"*.

It has all the advantages of nitrous oxide with the addition that it is more powerful, especially in its analgesic effects, and produces better relaxation. Its great disadvantage is its high degree of inflammability, which must be carefully guarded against in all cases, even to obviating static sparks between various parts of apparatus, etc.

Its field of usefulness is very large, as there is no contraindication to its use, except sources of ignition. It has been highly recommended for dental extraction work and in obstetrics, especially in the second stage of labor. No sweating is produced by its use, which is a great advantage in certain cases.

Dr. Sise gives a bibliography of 45 references and summarizes his personal observations and studies as follows:

"Ethylene is the purest anesthetic which we have today in that, for a given depth of anesthesia, it produces less effect on the body than any other known anesthetic. It can be used with a considerably higher mixture of oxygen than can nitrous oxide and it gives better relaxation. But, it does not give relaxation which can compare with that of ether and therefore it can not replace ether for abdominal surgery with subjects who are in good condition. Its one serious drawback is its inflammability; and this should be carefully guarded against. It is preeminently the anesthetic for the handicapped and 'bad risks' patients. It is undoubtedly the best general anesthetic which we know today for such patients."

BIOPSIES ON DOUBTFUL TUMORS

The question has frequently been raised whether, in the presence of a tumor whose character was open to doubt, we are justified in removing a piece for microscopical diagnosis. On this point, there is a wide divergence of opinion among physicians of the highest professional standing.

Dr. A. R. Kilgore, of San Francisco, has studied the evidence for and against this practice and presents his results in the April, 1925, number of *Calif. & West. Med.*

It appears from these studies that the answer to the question varies with the location and character of the lesion. In scirrhous carcinoma of the breast, it has been shown that extensive or vigorous palpation of the tumor greatly increases the probability of metastasis; and that, where a piece of the growth has been excised for diagnosis and, some time later, a radical operation has been performed, *all cases have died within 5 years.* On the other hand, in cases where the diagnosis has been made on the table, from the gross appearance or by frozen sections, and the operation completed at the same sitting, 80 percent have remained well after 5 years.

Tumors of the lip metastasize slowly and late and, when small enough to be doubtful, should be excised entire, removal of the neck glands being done later, if necessary.

Tumors of the skin and tongue fall in the same group with those of the lip. Surgery is of little avail in late cancer of the tongue. Small tumors, if doubtful, should be excised entire.

The greatest diversity of opinion in this regard, relates to possible cancerous pathological conditions in the uterus, but the weight of authority seems to favor the making of a diagnosis by frozen sections on cervical clippings or uterine scrapings, and the immediate completion of a radical operation if these are positive.

In essence, this paper is a plea, not against diagnostic incision of tumors but against delay between such incision and complete operation.

MANGANESE BUTYRATE AND CONTRAMINE IN GONORRHEA

Writing in the *Med. J. Australia*, 1924, II, 245 (reviewed in *Venereal Disease Information of the U.S.P.H.S.*, March 20, 1925), Dr. D. Rosenberg reports the methods in use in the treatment of venereal diseases in various cities of the United States, England and the Continent.

He outlines the treatment pursued in the clinic of Dr. J. E. R. McDonagh, at the London Lock Hospital, as follows:

"McDonagh gives nothing but intramuscular injections of manganese, butyrate, contramine, and detoxicated vaccine. He thinks that irrigations are obsolete and productive of chronicity. The author was with him for six weeks and his results certainly justified his claims. There were patients who had been the rounds of the hospitals in London, having been treated with irrigations, diathermy, and so on, who completely lost the yellow discharge after the following treatment:

"First day of visit: Manganese butyrate 1 Cc. of a 1-percent solution is injected. Fifth day of visit: Manganese butyrate 1.5 Cc. of a 1-percent solution is injected. If improvement is not good after the second injection, he gives 1 Cc. of contramine and then 1 Cc. of manganese butyrate. In persistent urethritis, he gives colloid mercury 1 Cc. of a 1 in 2,000 suspension.

"In acute salpingitis, on the first day, he gives 1 Cc. of manganese butyrate. On the fifth day he gives 1.5 Cc. of the same drug, and on the eighth day he gives 2 Cc. Then he gives a course of vaccines: Four injections of two thousand five hundred millions and four injections of five thousand millions of detoxicated gonococcal vaccine at 5 to 7 day intervals. He gives another course in 4 to 5 months if examination then reveals the presence of gonococci. He uses contramine in gonorrheal rheumatism. On the first day he gives 0.125 Gm.; on the fourth day, he gives 0.25 Gm., and on the ninth day he gives 0.5 Gm. Good results have been seen from this treatment without irrigation."

THERAPEUTICS OF PARATHYROID GLAND

Dr. Wm. N. Berkeley, of New York, writing in the *Boston M. & S. J.* for Feb. 12, 1925, makes the following suggestions:

Be sure your parathyroid preparation is potent and standardized. Many preparations on the market are worthless.

The dose of a standard extract, by mouth or hypodermically, is 1-50 of a grain.

It has been found useful in the following conditions.

Tetany, of all descriptions. (Nonsurgical tetany is rare in this county and cases are usually mild and yield readily to calcium medication and antispasmodics.)

Postnatal convulsions of infants. (Here it should be used hypodermically in full doses, in the hope that there is no brain injury.)

Chronic suppurative processes, especially varicose ulcers.

Paralysis agitans. In these cases, no cure is produced, but the symptoms are controlled and, in 60 to 70 percent of cases, the patient's condition is much improved. The dose here is 2 or 3 tablets per day, taken by mouth after meals, and a hypodermic at bedtime.

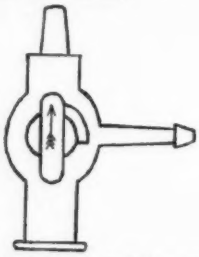
There are no contraindications to the use of this remedy, and overdosage is almost impossible, though one patient in a thousand, perhaps, has an idiosyncrasy and can not take it at all.

The keynote of parathyroid, and other endocrine therapy, is *small doses at frequent intervals, over long periods of time.*

CHEST ASPIRATION

In the *Medical Journal and Record* for May 20, 1925, Dr. Milton A. Bridges, of New York, reports a simple and readily portable device for chest aspiration.

The parts required are a 100 Cc. Luer syringe; twelve inches of rubber tubing 3-8 inch in diameter; three needles of assorted gauges, adapted for Luer nozzle; one special B-D. Luer-fitting stopcock (as illustrated in the sketch).



In use, the stopcock is interposed between the syringe and needle and the tubing is connected with the side outlet.

The turn-key is set pointing toward the patient and the needle is inserted in the ordinary manner. Withdrawal of the plunger draws fluid from the pleural cavity. When the syringe is filled, the key of the stopcock is turned to the side and the plunger pushed in, ejecting the fluid into a waiting container. This process may be repeated as often as desirable.

SHOE DYE POISONING

Dr. C. W. Muehlberger, state toxicologist of Wisconsin, calls attention, in the *J.A.M.A.* for June 27, 1925, to the fact that a person may be poisoned by wearing shoes colored with a black dye in which anilin of nitrobenzene is used as a solvent. He concludes as follows:

1.—A survey of the medical literature indicates that nitrobenzene or anilin poisoning resulting from the use of shoe dyes is a common occurrence. Reports of forty-seven cases previously published from Europe and the United States during the last twenty years have been collected.

2.—Nine new cases of shoe-dye poisoning are here reported. Six of these cases are known to have resulted from the use of a shoe dye that contained anilin instead of nitrobenzene as the solvent. These are the first cases of anilin poisoning from shoe dye to be reported in the United States.

3.—The chemical analyses of four commercial preparations of black shoe dye are given. All these were found to contain either nitrobenzene or anilin.

4.—The most important symptom is cyanosis without apparent cause occurring in a previously normal person. Other less constant symptoms are vertigo, headache, weakness and nausea.

5.—Shoes should be removed and the patient kept warm in bed until the cyanosis clears. Oxygen inhalation is without effect on the cyanosis.

6.—The only way that this type of poisoning can be adequately prevented is by State or National Health regulations prohibiting the manufacture and sale of toxic shoe dyes. It is recommended that nitrobenzene and anilin be replaced by nontoxic solvents in order to eliminate the danger of poisoning.

VINCENT'S DISEASE

The various morbid conditions caused by Vincent's bacillus are variously known as Vincent's angina, or stomatitis; ulceromembranous tonsillitis; trench-mouth, and some others.

The importance of these conditions has been recognized only within comparatively few years, but the fact that they are widely prevalent and must be diagnosed from such important diseases as primary syphilis and diphtheria makes the article by Dr. Wilbur M. Bowman, in the *Virginia M. Monthly*, for May, 1925, of great practical interest.

The diagnosis from syphilis is not always possible, as there is some resemblance between the two organisms, which may also be present together. The Wassermann test and darkfield examinations should be frequently made.

From diphtheria, the distinction is made by the fact that, in Vincent's disease, the symptoms are much milder than one would expect from the appearance of the affected parts, and that the Klebs-Loeffler bacillus is absent and Vincent's organism is present in the latter condition. This organism is a spindle-shaped bacillus, accompanied by a spirillum, which is a degeneration form. Both stain with Loeffler's methylene-blue, but the spirillum stains much more faintly than the bacillus. When once seen, the organism is easily recognized.

Dr. Bowman states that neglect of oral hygiene and faulty dental work are frequent predisposing causes. The disease is not strongly contagious and is conveyed by direct or indirect contact, from mouth to mouth.

The treatment which Bowman has found successful is to put the patient to bed and institute precautions as for any infectious disease. The following morning a saline laxative is given and the affected areas are thoroughly but gently cleared of all necrotic material with a swab dipped in a mixture containing neutral acriflavine, 5 percent; gentian-violet, 2 percent; and methylene-blue, 2 percent. All pockets should be washed out with this solution, using a blunt needle. The use of a toothbrush is temporarily discontinued, and a 2-percent solution of sodium perborate is used frequently as a gargle and mouth wash.

In severe cases, an intravenous injection of salvarsan helps materially.

By this method, the author's cases have cleared up, clinically and bacteriologically, in a few days. The sodium perborate solution should, however, be used for several weeks.

When the mouth and throat are permanently clear of Vincent's organisms, and not before, diseased teeth and tonsils should be removed.

SINUSITIS AND SWIMMING

The frequent occurrence of nasal sinus disease among swimmers has led Dr. H. Marshall Taylor, of Jacksonville, Fla., to inquire into the matter, and, after careful investigations, he reports in the *J.A.M.A.* for July 4, 1925, that he believes this condition results not so much from contamination of the water as from the fact that fresh water washes away the normal protective secretions of the nose and pharynx, and that the body resistance is seriously lowered by the loss of heat which occurs during prolonged immersion in cold or cool water. This lowered resistance permits the activity of bacteria already present in the nose and throat.

SCIENTIFIC THERAPY AND PHARMACEUTIC RESEARCH

In an address before the American Drug Manufacturers' Association, delivered April 23, 1925, and published in the *J. A. M. A.* for May 16, 1925, Dr. Morris Fishbein, of Chicago, calls attention to the enormous assistance which careful and scientific pharmaceutical houses are rendering to the cause of scientific therapy.

Dr. Fishbein mentions the fact that the trend of thought which led to the use of the expression, "therapeutic nihilism", began about the end of the nineteenth century, and was not so much an attempt to destroy belief in all drugs as an attack on the outrageous pharmaceutical commercialism which was rampant about that time.

While, today, we want to find a scientific basis for our use of drugs, where it is possible to do so, we by no means exclude substances for which our basis of use is largely or wholly empirical. We do not even know *why* quinine acts as it does, to say nothing of x-rays or vitamines.

In earlier days, when we said "Do no harm", it was a warning against the careless use of ill-understood remedies. Today much harm may be done by the *neglect* to

use certain well-recognized therapeutic resources.

The enormous amount of research involved in the production of our chemotherapeutic specifics is indicated by the number by which they are frequently designated—"606", "914", "Mercurochrome, 220", etc., representing hundreds of trials and failures before success was achieved.

We are coming more and more to see that the function of the physician is not to prevent death but to maintain life at its highest and best by seeking to establish the most favorable conditions through the employment of *all* those agencies which have power to beneficently modify human tissues.

We must never forget the *vis medicatrix naturae*, to which all our "cures" are really due; but all credit should be given to the men who are finding new drugs for us and telling us about them without exaggeration.

PRURITUS ANI

In the April, 1925, number of the *A. J. of Electrotherap. & Radiol.*, Dr. M. O. Lyons recommends a treatment for pruritus ani consisting, in addition to the attention to the general bodily functioning which is always required in these cases, of X-rays and ionization.

The x-ray was used with the patient in the knee-chest position, with buttocks widely separated. The parts were thoroughly cleansed prior to exposure and all adjacent structures carefully protected. The fractional dose system was employed, with treatments once a week, using the rays unfiltered through 3 mm. of aluminum. Erythema was not produced.

Ionization was done with 6 percent silver nitrate, from the positive pole, or diluted Lugol's solution, from the negative pole. Application was made with a nickle-plated electrode wrapped with bandage to a size of half an inch, soaked in the solution and inserted in the anus without lubrication. The indifferent electrode was placed over the lumber region. A mild current was allowed to flow for from 15 to 45 minutes.

Several cases showing favorable results are reported.

RHEUMATISM AND HEAT

Dr. Charles Sundell, writing in the *Practitioner* (London) for March, 1925, classifies as "rheumatic affections", rheumatic fever, chorea of childhood, sciatica, lumbago, pleurodynia and various others, and excludes the cases of arthritis where there have been changes in the bones and cartilages and also gonorrheal arthritis.

He calls attention to the fact that, while the sweat of normal persons is neutral or very faintly acid to litmus, that of patients suffering with the conditions noted is strongly acid, when they sweat at all, which is rare, for their skins are characteristically dry and inactive, while their temperature is generally subnormal.

Dr. Sundell believes that, if we can raise the body temperature a few degrees and thus produce sweating, the heat so generated will liberate from the tissues certain poisonous substances (possibly sarcolactic acid), which will then be eliminated by the sweat.

For this purpose, he recommends the electric-light cabinet or, if this is not available, the hot pack, which he gives as follows:

Upon a firm mattress are spread in succession a thick blanket and a warmed mackintosh sheet; the patient is stripped, wrapped in a warm, dry blanket, laid upon the mackintosh, and then covered with another couple of blankets till the pack is ready. For the actual pack a fairly thick blanket is spread out, its sides rolled inwards till they meet in the centre; the double roll thus formed is loosely folded and placed on a large bath or pail, over it is then poured a large kettleful of boiling water. The hot, wet blanket is then quickly wrung out in a large wringer of linen, or canvas, by two people, in the manner used for preparing fomentations. The two loose coverings are slipped off the patient, who is turned upon his side, one-half of the wet blanket is passed underneath him; he is turned on to his other side, and the blanket pulled through under him, and the two sides folded closely round him; four hot-water bottles are placed near him, and the free sides of the mackintosh and blanket on which he is lying are in turn wrapped around him; lastly, two or three more dry coverings are thrown over him and tucked closely round his neck. In these wrappings he lies for twenty to thirty minutes. His temperature rises two or three degrees and free sweating takes place. Should symptoms of distress occur, he is released at once. After the pack, he is quickly dried and wrapped in warm, dry blankets. If it can be arranged, it is better to use a separate bed or couch for the pack, so that there may be no delay, with its risk of chill, in settling the patient down in his dry coverings. Sweating usually continues for at least half an hour after the termination of the pack.

By either of these methods the temperature may be raised to 101° F., and free sweating produced, and the doctor has noted very gratifying results following the pyrexia induced in this manner.

New Books

ABT: PEDIATRICS

ABT'S PEDIATRICS. *Edited by Isaac A. Abt, M.D. Set complete in eight octava volumes totaling 8000 pages with 1500 illustrations, and separate Index Volume free. Philadelphia: W. B. Saunders Company.* 1925. *Price* $10.00 *per volume. Sold by subscription.*

Two more volumes of this remarkable work have now appeared, leaving but one more to complete the set.

No extensive discussion of the merits of this publication is necessary, for it is well and generally understood to be an indispensable reference work in any medical library which is at all complete.

Volume VI deals with Body Temperature; Infectious Diseases; Anesthesia, General and Local; Peculiarities of Surgery in Childhood; Fetal Malformations; Vulvovaginitis; and Arthritis Deformans.

Volume VII discusses the Physiology of the Nervous System; Surgery of the Head and Spine, Brain and Spinal Cord; Diseases of the Nervous System; Psycho-pathology of the Child; Defects of Speech; and Sexual Life of the Child.

FRIEDENWALD-RURAH: DIETETICS

DIET IN HEALTH AND DISEASE. *By Julius Friedenwald, M.D. and John Rurah, M.D. Sixth Edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company.* 1925. *Price* $8.00.

The tremendous strides which have recently been made in the progress of the medical sciences are nowhere more evident than in the clarification of our ideas regarding the relation of foods to normal and pathological body functioning. While a few years ago the practice of dietetics was almost wholly empiric, it may now be regarded as at least half scientific.

The authors of this volume made their first contribution to this subject more than 20 years ago, and, if one desires an impressive demonstration of the advances in the science of foods and feeding, he has but to compare the first edition of this book with the present (sixth) edition.

The advances referred to have necessitated the entire rewriting of many sections of the book, among them those on food poisoning, anaphylaxis, nephritis, diabetes, high blood-pressure, etc.

The great changes in our ideas of infant feeding have led to the virtual recasting of this entire chapter, so as to deal adequately with the food requirements of infants and children, and the use of goat's milk, dried milk and citrated milk in the dietary, as well as with the newer concepts of vitamines and deficiency diseases.

It is almost impossible that a textbook should be, at the time of its appearance, absolutely up-to-date on the newer findings but, while little is said about the uses of ultraviolet irradiations in the various deficiency diseases, it is of interest to note that the authors state that the rays of the mercury-vapor lamp are of value in the treatment of rickets.

Tables of food value, salt values, vitamine values and all sorts of information along these lines which can be tabulated are freely used throughout the work, and there are many diet lists and recipes. The index is ample, occupying 32 pages.

This is a book which should be in the reference library of every physician and should be freely and frequently consulted.

CORBUS AND O'CONOR: DIATHERMY

DIATHERMY IN THE TREATMENT OF GENITO-URINARY DISEASES WITH ESPECIAL REFERENCE TO CANCER. *By Budd C. Corbus, M.D., F.A.C.S. and Vincent J. O'Conor, S.B., M.D. Illustrated. St. Paul and Minneapolis: The Bruce Publishing Company.* 1925. *Price* $5.00.

The powerful effect of heat in killing the gonococcus has been known for some time, and various means for applying this remedy have been tried. The most modern method is by means of diathermy.

The authors are urologists of wide experience and, in this volume, they present the results of their experience with diathermy in the treatment of various diseases of the genitourinary organs.

This volume discusses medical diathermy (using temperatures up to 122° F.) and surgical diathermy (using temperatures above 122 degrees). The former is used in the treatment of gonorrhea in all its manifestations, and other conditions where heat is indicated; the latter in treating cancer, various tumors, etc.

The book is simply written and gives full details of technic, with ample illustrations, including a number of instruments and procedures devised by the authors.

A valuable addition to the library of any urologist or electrotherapist.

HOWELL: PHYSIOLOGY

TEXT-BOOK OF PHYSIOLOGY; FOR MEDICAL STUDENTS AND PHYSICIANS. *By William H. Howell, Ph.D., M.D. Ninth Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company.* 1924. *Price* $6.50.

Physiology is one of the fundamental sciences upon which medicine is based, and the past decade has seen considerable advances in our knowledge of the functioning of the human body.

In this (the 9th) edition of Howell's standard book, an attempt has been made to embody the results of all important research work in this field.

The physiology of the endocrine glands receives full consideration, and, where possible, facts are presented quantitatively and on the basis of our modern physiochemical and chemical concepts.

BOYD: SURGICAL PATHOLOGY

SURGICAL PATHOLOGY. *By William Boyd, M.D., M.R.C.P. Illustrated. Philadelphia and London: W. B. Saunders Company.* 1925. *Price* $10.00.

Pathology is considered a dry and academic subject by the average physician, because it deals, largely, with microscopical findings and pickled specimens in jars or dead organs removed at necropsy.

The present volume is intended for surgeons and practitioners, rather than for laboratory workers and deals, to a great extent, with the gross appearance of diseased parts or organs removed at biopsies in the operating room, and with the microscopic findings upon such specimens.

It is a sincere and successful attempt to correlate the findings of the pathologist with conditions as they are seen by the physician and the surgeon in the actual handling of the patients.

The clinical as well as the laboratory findings are considered sufficiently to render the book extremely practical.

A thorough knowledge of pathology is essential to a sound understanding of the principles of medicine, and no one can be a thoroughly rounded physician without this knowledge. This volume seems to be one which can hardly be spared from any reasonably adequate medical library.

HUTCHISON: DYSPEPSIA

LECTURES ON DYSPEPSIA. *By Robert Hutchison, M.D., F.R.C.P. London: Edward Arnold & Co. New York: Longmans Green & Co.* 1925. *Price* $1.80

What do we mean by dyspepsia? Etymologically, it means difficult or painful digestion. Dr. Hutchison says it is "discomfort of any kind, arising during the process of digestion on the result either of organic disease of the stomach or a primary disorder of its functions."

This excellent little book is a collection of lectures delivered by Dr. Hutchison, at various times and places, and is intended entirely for the practitioner. There is nothing in it for the specialist in gastroenterology.

The volume opens with a discussion of the clinical investigation of dyspepsia, and we are reminded that, in many instances, diseases of remote organs are attended by gastric symptoms, for which we must be on the lookout. We are also reminded that true pain, vomiting and loss of weight point to organic rather than functional disorders.

Hutchison feels that, in these cases, the history is of greater value for diagnosis than is the physical examination, and recommends that we listen patiently to all the sufferer has to say, sifting out what is important from the mass of verbiage.

Various chapters deal with "The Significance of Pain", "Conditions Which Simulate Dyspepsia", "Organic Dyspepsia", "Functional Dyspepsia", "Chronic Constipation", and several others.

The book is written in an easy, colloquial and pleasing style and reflects the wide experience and sound, thoughtful commonsense of the author. His suggestions for treatment are clear and practical. It is good reading and full of meat from cover to cover, and any practitioner who will buy and study it will get big value for his money.

BESANT: PSYCHOLOGY

PSYCHOLOGY: ESSAYS AND ADDRESSES. *By Annie Besant. Second Edition. Chicago, 826 Oakdale Ave.: Theosophical Publishing House.* 1919. *Price* $1.50.

College or laboratory psychology is one thing; the socalled "practical" or "applied psychology" is something quite other. Occult psychology attacks the matter from still a different standpoint, but seems to go into the elementary truths, which underlie both of the other conceptions of the subject.

Dr. Besant begins by referring to the fact that, in the Orient, man is regarded, primarily, as a soul, which remains constant while the forms in which it is invested change from age to age. To the average westerner, man consists of a body and a mind. The body is the thing in which his interest centers, and his mind he often regards as being out of his control, and hence his master. That the real man is a soul, above and able to control the mind as well as the body, opens some new and interesting fields for speculation.

For another thing, this author entirely separates the workings of the desires and emotions from the processes of true thought, as being functions of an entirely different plane of consciousness, and this complicates, while at the same time simplifying the problem. It is difficult to grasp this paradox without reading the book.

The second chapter is devoted to proofs of the existence of the soul and, while this may sound chimerical to some, the argument is along truly scientific lines and is so clear and logical that, if you admit the basic premises (and they are not at all far-fetched), you can scarcely fail to arrive at the conclusion.

That the individuality continues in full force and vital distinctness from age to age, while the personality through which it manifests itself changes with each new appearance, is a tenet of all the older religions, and it is interesting to see how the author brings this teaching to bear upon the subject of psychology.

All the ancient concepts are used to illuminate the discussion upon "Moods", "Hypnotism", "Memory" and "Mental Healing".

Psychology, in one shape or another, is coming in for more notice all the time and is entering largely into the conduct of our everyday lives, and to those who are interested in the study of this subject, the present volume is heartily recommended as a means for obtaining a new and refreshing, if somewhat surprising, point of view.

COCA: IMMUNOLOGY

ESSENTIALS OF IMMUNOLOGY FOR MEDICAL STUDENTS. *By Arthur F. Coca, M.D. Baltimore: Williams & Wilkins Company.* 1925. *Price* $3.50.

This volume is a presentation of the author's selection of the essential theoretical and technical details of the science of immunology, necessary for the medical student.

The book is divided into two parts: the theoretical part, dealing with the general theory of immunology and a practical part, essentially a laboratory manual for the guidance of the student in performing the various tests concerned in the determination of the various immunity reactions.

The presentation is clear and very concise and should enable one to perform all of the tests described without trouble. The Reviewer believes that it is unfortunate that no mention is made of nonspecific protein injections and their reactions particularly, as the literature contains so much concerning this subject, especially during the last few years.—J. F. B.

MEDICAL CLINICS OF NORTH AMERICA

THE MEDICAL CLINICS OF NORTH AMERICA. *Issued serially, one number every other month. Volume VIII. Number VI, and Volume IX, Number I, May and July,* 1925. *Per Clinic Year (July,* 1924 *to May,* 1925). *Paper* $12.00. *Cloth,* $16.00. *Philadelphia & London: W. B. Saunders Company.*

The present volume of this always interesting and valuable series is that for May 1925, and contains contributions by a number of leading clinicians of Boston.

Among the very practical subjects discussed are, "Vasomotor Rhinitis and Hypothyroidism", "Uranalysis", "Disordered Function of the Colon", "Backache in Diseases of the Lymph Nodes", "End Results of the Medical Treatment of Peptic Ulcer", and a number of others.

These books are always helpful and worth while.

The July number of the *Clinics* contains contributions by the clinicians of St. Louis and is an exceptionally interesting number.

Dr. Wm. Engelbach gives a study of "Hair Growth and Pigmentation" which is the completest thing of the kind which we have seen and should aid greatly in the diagnosis of endocrine disorders. Among the points he makes are that a marginal alopecia is due to hypothyroidism, while the involvement of the vertex in this process is the result of pituitary disorder.

Dr. Alexis F. Hartmann interestingly discusses "Diabetes Mellitus in Infants and Children"; and Dr. Wm. W. Graves has pertinent things to say regarding "Factors Which Underlie Accuracy in Clinical Diagnosis".

Dr. Sidney I. Schwab presents several cases of paresis treated with tryparsamid, and feels that this drug, in combination with arsphenamine and mercury, offers the best hope for success in these cases.

The illustrative cases of mental deficiency and dementia presented by Dr. Francis M. Barnes, Jr., throw much light on the differential diagnosis of these two classes of intelligence defects.

Altogether, a volume you can not well afford to miss.

NUTT: THE FOOT

DISEASES AND DEFORMITIES OF THE FOOT. *By John Joseph Nutt, B.L., M.D., F.A.C.S. Second Edition Completely Revised. New York: E. B. Treat Company,* 45 *E.* 17*th St.* 1925. *Price* $4.00.

Orthopedic surgery has made great strides during recent years, especially since the War, but many orthopedic conditions require such highly specialized technic and such complicated apparatus for their successful management that the average practitioner does not feel competent to handle them.

In the case of the foot the condition is different. Here most of the abnormalities are easily understood and treated and, as this class of cases cause an immense amount of discomfort and disability, they should be handled by the practitioner.

This volume deals with the various diseases and deformities of the feet—from corns and callouses to the defects following infantile paralysis—in such a clear and practical manner that any physician who cares to undertake the treatment of such cases can readily learn to do so in an intelligent and successful manner, which should add to his usefulness to his patients and to his prestige and income.

THACHER: PHYSICAL DIAGNOSIS

A MANUAL OF PHYSICAL DIAGNOSIS. *By Austin Flint, M.D., LL.D. Ninth edition, Revised by Henry C. Thacher, M.S., M.D. Illustrated. Philadelphia: Lea & Febiger:* 1925. *Price* $3.25.

Too many of the younger physicians today are leaning so hard upon the laboratory for help in diagnosis that they are forgetting how to use their five senses in studying patients.

The older generation not only talked to their patients and looked at them; they felt them, listened to them, even smelled them and learned much thereby. Dr. Austin Flint was an outstanding member of that generation and he knew physical diagnosis as too few know it today.

This little book is not a substitute for the large and elaborate reference books on

diagnosis, which no one ever reads through, however necessary they are in the library. You will find here nothing about electrocardiography or basal metabolism tests—just the things you can find out about your patient by inspection, palpation, percussion and auscultation. The chances are you have forgotten many of these things.

This is a book which should be studied by every medical undergraduate, and whose thoughtful perusal, from cover to cover, will do no harm to any physician and much good to most.

VENEREAL DISEASE BULLETIN No. 77

VENEREAL DISEASE BULLETIN No. 77; Transactions of the Conference of Venereal Disease Control Officers of the State Health Departments and the U. S. Public Health Service. 1924. *U. S. Public Health Service, Treasury Dept., Washington, D. C.* 1925.

The greater part of this publication is made up of the report of a special Committee appointed to make a study of the methods of diagnosis, treatment and policies in effect in the various venereal disease clinics throughout the country, and it is believed that in this report will be found considerable material which will be of interest and assistance to the general practitioner as well as the specialist in urology or dermatology. The publication can be secured without cost by addressing a request to the U. S. Public Health Service, Washington, D. C., mentioning V. D. Bulletin No. 77.

RINEHART: HEALTH

THE COMMONSENSE OF HEALTH. *By Stanley M. Rinehart, M.D. New York: George H. Doran Co.* 1924. *Price* $2.50.

We all realize that, if our patients were better informed as to the care of their bodies and minds, they could avoid many of the illnesses which now overtake them and could better cooperate with us when unavoidable illness (if there is such a thing) comes.

The present volume is one that we can recommend to our patients with the secure feeling that what information they get is accurate and reliable and that it is written in languages which any person of average intelligence and education can understand.

Dr. Rinehart begins with a discussion of the common ills which afflict us all, such as colds, coughs, pneumonia, headache, etc., and his comments reflect the most modern ideas on these subjects.

Under the title "The Greatest Pump in the World," he discusses the circulatory system, and then proceeds to a consideration of that popular indoor sport, "Symptom Hunting".

There are chapters on the nature and causes of the symptoms of old age; the hygiene of work, physical and mental; popular bacteriology; the commonsense of the nerves; and many others.

If we could persuade all of our patients to read a book like this, carefully and thoughtfully, our work would be easier and our results more prompt and certain.

HERTZLER: LOCAL ANESTHESIA

THE TECHNIC OF LOCAL ANESTHESIA. *By Arthur E. Hertzler, A.M., M.D., Ph.D., LL.D., F.A.C.S. Third Edition. Illustrated. St. Louis: The C. V. Mosby Co.* 1925. *Price* $5.50.

In these days, we recognize that all operations can, in selected cases, be done under local anesthesia, but the technic is more or less complicated and difficult and it should never be attempted for spectacular effect nor by one not thoroughly trained in its use.

Dr. Hertzler has, in this volume, gone fully into the technic of all forms of local anesthesia, including infiltration, regional anesthesia, nerve blocking, etc., in a straightforward and workmanlike manner, discussing such procedures as he has found most valuable in his personal experiences.

The book is well gotten up and well arranged. Subheads in bold-faced type set off the various subjects in each chapter, which facilitate reference.

Beginning with a general discussion of the drugs used and the technic in general, the author proceeds to a discussion of the steps necessary in anesthetizing special regions and gives full details for operations on the face, jaws and tongue; the tonsils, adenoids, larynx, trachea and thyroid; the thorax, lungs and spine; the penis and scrotum; inguinal and other hernias; and, in fact, every region of the body.

The exact technic, at every stage of the process, is given so clearly that any physician of ordinary knowledge and dexterity should be able to follow it, and 140 excellent illustrations are scattered throughout the text to elucidate it.

An invaluable book for any one who uses local anesthesia occasionally or for the specialist in anesthesia.

KELLS: DENTIST'S OWN BOOK

THE DENTIST'S OWN BOOK. *By C. Edmund Kells, D.D.S. Illustrated. St. Louis: The C. V. Mosby Co.* 1925. *Price* $7.50.

Some of us are able to remember what joy and profit we got out of a delightful old volume known as, "The Boy's Own Book". Dr. Kells has set out to write the same sort of thing for the dentist and seems to have done it very well.

It should prove easy and enjoyable reading for any dentist, and not without much profit for any professional man, for Dr. Kells has gone into full and elaborate details as to dental economics and the proper way to keep professional and financial records of all kinds.

It is really a compendium of the management of an office practice, handled from every angle, written in a pleasing conversational style and illustrated with anecdotes of personal experiences.

A very useful and valuable book and one that few could possibly regret buying.

WADDINGTON: ELECTRO-PHYSIO-THERAPY

PRACTICAL INDEX TO ELECTRO-PHYSIO-THERAPY. *By Joseph E. G. Waddington, M.D., Published by the Author. Detroit, Mich.* 1925. *Price* $6.50.

The first part of this book deals with the general principles and technic of electro-therapy. It is well illustrated, showing all the standard machines on the market, and describing them. The physics of each modality is clearly described and can be read and understood by the average physician. This is unusual in any book on electrotherapeutics, for most of them give technical descriptions that only an expert electrician could understand. The technics are described and illustrated so that they could be given from the description by the physician without previous experience.

The second part of the book is entitled: "Index of Diseases and Selective Technics". This section ruins an otherwise excellent book. He recommends a high frequency current for the treatment of head lice; diathermy for the treatment of paralysis agitans and locomotor ataxia; and under diabetes mellitus says that direct diathermy through the pancreas and liver is always indicated. Such statements make the medical profession skeptical of the whole subject of electrotherapy.

J. S. C.

WILLIAMS: DREADS AND FEARS

DREADS AND BESETTING FEARS, Including States of Anxiety, Their Causes and Cure. *By Tom A. Williams, M.B., C.M., Neurologist to Freedman's Hospital, etc. Mind and Health Series. Boston: Little Brown & Co.* 1923. *Price* $1.75.

Fear not only causes intense distress to the person who is afraid but frequently is the cause (often unrecognized) of functional nervous disorders and peculiarities of behavior which interfere with the sufferer's efficiency in many ways.

In this volume, Williams traces many of our pathological fears and anxiety states back to the plastic and impressionable years of childhood, and calls attention to the certainty that our prejudices can not fail to react upon our children, even though we strive to conceal them.

The fact that those things from which one runs away are always terrifying, because they remain unknown, leads up to the proposition that *only the unknown is ever terrifying*; and that a dreadful certainty is better than an uncertain dread.

Some of the subjects considered in detail are, "Bashfulness and Kindred States", "College Breakdown", "Common Phobias", "Physical Condition and Fear" and a number of others.

The book is written in a simple and readable style, entirely comprehensible to any person of ordinary intelligence and education, and the explanations given of the mechanism of various fear states should go far to emancipate those who suffer from them.

The physician who studies the book will find many ways in which he can help his nervous and fearful patients.

COLLINS: LITERATURE

TAKING THE LITERARY PULSE: Psychological Studies of Life and Letters. *By Joseph Collins, M.D., author of "The Doctor Looks at Literature", "The Way with the Nerves", etc. New York: George H. Doran Co.* 1924. *Price* $3.00.

The physician who spends all his reading hours in the perusal of the literature of his profession may become a very able doctor, but he is likely to become a warped and lopsided human being.

Few of us have sufficient time to devote to general literature to enable us to gain a keen insight into the mechanism of its workings and the psychology of its authors, and so we are fortunate to have a member of our profession who has done this and has given us the results of his analytical studies of writers and their motives, set forth in a workmanlike, trenchant and charming style.

In addition to dealing specifically with certain books and authors with delightful frankness and insight, Dr. Collins covers some modern literary trends in such chapters as, "Purity and Pornography," "Unpleasant Novels", "Doctors as Men of Letters", "Lunatics of Literature", and a number of others.

If you get hold of this book, you are assured of a number of refreshing and stimulating hours, and if you haven't read the stories about which he is writing, you will be sure to want to get them and see if his judgment of them and of their writers is correct.

We will not go so far as to recommend this book as a substitute for a vacation this summer, but it will certainly prove a helpful and valuable supplement to your vacation as the evenings begin to get longer this fall.

BODKIN: RECTUM

DISEASES OF THE RECTUM AND PELVIC COLON. *By Martin L. Bodkin, M.D., F.A.C.S. Illustrated. Second Edition Revised and Enlarged. New York: E. B. Treat & Company, 45 E. 17th St.* 1925. *Price* $6.00.

Many of the average practitioners' cases suffer from diseases of the colon, rectum and anus and it is a decided advantage to find much modern information regarding these structures grouped under one cover, as in the present volume.

The anatomy and physiology of the parts are briefly considered, and the method of conducting physical examinations is given in some detail.

The various operations on the lower gut are discussed fairly fully, but it is rather surprising that, in a volume dated 1925, there is little or no reference to the use of

diathermy and other physiotherapeutic modalities in the treatment of hemorrhoids and other rectal diseases.

This (second) edition contains new chapters on colonic enemata and the relation of the intestinal flora to diseases of the colon.

On the whole, the book is inclined to be rather heavy, and technical and seems not to present adequately the newest ideas in treatment. The practitioner can probably find something better suited to his needs, though it might be helpful to the proctologist.

MUNK: NIERENERKRANKUNGEN

PATHOLOGIE UND KLINIK DER NIERENERKRANKUNGEN (NEPHROSEN, NEPHRITIDEN UND SCHRUMPFNIEREN.) *Von Dr. Fritz Munk. Zweite, vollständig neu bearbeitete und wesentlich vermehrte Auflage. Mit 72 Figuren im Text und 4 farbigen Tafeln. Berlin: Urban & Schwarzenberg.* 1925.

The book constitutes an extensive and up-to-date treatise on the various diseases of the kidney, including nephrosis, nephritis and contracted kidney. The discussion is apparently quite complete and the text is well illustrated, mostly with microphotographs of pathological histology, a number of which are in color.

The book is quite technical and seems to be intended mainly for advanced research workers.

E. H. V.

ABDERHALDEN: PHYSIOLOGIE

LEHRBUCH DER PHYSIOLOGIE IN VORLESUNGEN; I. TEIL. *Von Emil Abderhalden. Abbildungen. Berlin: Urban & Schwarzenberg.* 1925.

The author has now embarked upon a new series of books to add to his already voluminous works, and this series gives promise of being as important as others have been.

The first volume consists of chapters on: Function of the Digestive System with its Organs of Internal Secretion (Liver, Pancreas); the Work of the Spleen; Endocrines; Functions of the Genital System; Heredity; Functions of the Skin and its Structure.

E. H. V.

CLASEN: VARICOSIS

VARICOSIS—ULCUS CRURIS; and THEIR TREATMENT. (In German.) *By E. Clasen. Third edition. Paper,* 128 *pp. Berlin: Urban & Schwartzenberg.* 1925. *Price* 3.3 *marks.*

The author, in this small but detailed discussion of the subject, takes up the etiology, diagnosis and treatment of these affections. Operative procedure in varicosis is stated to be useless and the use of specially prepared "glue plaster" is particularly recommended. Pondofr's injections, and Linser's injections of 1 to 2 percent mercuric chloride solutions are also found useful. The book should be read by all who have occasion to treat these conditions.—E. H. V.

PETTY & STONER: DIABETES

DIABETES, ITS TREATMENT BY INSULIN AND DIET. A Handbook for the Patient. (Second Edition.) *By Orlando H. Petty, A.M., M.D., and William H. Stoner, A.M., M.D. Illustrated. Philadelphia: F. A. Davis Company.* 1925. *Price* $1.50.

DERCUM: PHYSIOLOGY OF MIND

THE PHYSIOLOGY OF MIND. An Interpretation Based on Biological, Morphological, Physical and Chemical Considerations. *By Francis X. Dercum. Second Edition, Reset. Philadelphia and London: W. B. Saunders Company.* 1925. *Price* $3.50.

NALL: OBSTETRICS

AIDS TO OBSTETRICS. *By Samuel Nall, B.A., M.B. Revised by C. J. Nepean Longbridge, M.D., Vict., F.R.C.S. Thirty-Second Thousand. Ninth Edition. New York: William Wood and Company,* 1925. *Price* $1.25.

DAKIN: NURSING

SIMPLIFIED NURSING. *By Florence Dakin, R.N. Illustrated. Philadelphia, London, Montreal: J. B. Lippincott Company.* 1925. *Price* $3.00.

SONNTAG: CHIRURGISCHE PROPÄDEUTIK

CHIRURGISCHE PROPÄDEUTIK. Eine allgemeine chirurgische Diagnostik für Studierende und Ärzte. *Von Professor Dr. Erick Sonntag. Mit* 135 *Abbildungen im Text. Verlag von George Thieme. Leipzig.* 1925. 9.60 M.

MARSHALL: SEXUAL PHYSIOLOGY

AN INTRODUCTION TO SEXUAL PHYSIOLOGY FOR BIOLOGICAL, MEDICAL AND AGRICULTURAL STUDENTS. *By F. H. A. Marshall, F.R.S. Illustrated. New York: Longmans, Green & Co.* 1925. *Price* $2.75.

NATIONAL COUNCIL VENEREAL DISEASE: REPORT

NINTH ANNUAL REPORT OF THE NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASE. June 1, 1923—May 31, 1924. *London:* 102 *Dean Street.* 1924.

Medical News

DEATH OF WASSERMANN

Professor August von Wassermann, whose name is known the world over in connection with the complement fixation test for syphilis, died in Berlin on March 16, 1925, at the age of 59 years. His later years had been devoted to researches in connection with cancer and tuberculosis.

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TO LEAD FIGHT AGAINST TRACHOMA

Dr. Walter Sisson, of Wauseon, Ohio, graduate of the University of Vermont, and authority on eye diseases, has been made Medical Director of the Near East Relief in Armenia, where he will head the fight against trachoma, the dread eye disease of the Orient.

BANKERS' SHARES

Physicians who have been offered "Bankers' Shares" in the Ford Motor Company of Canada, Ltd., will be interested to note that this "privilege" is simply a chance to buy, at $1,000 per share, securities which can be bought in the open market for less than $500 per share; and that the same or a similar concern has been enjoined from doing business in the state of New York on the grounds that the scheme is intended to deceive.

CIVIL SERVICE EXAMINATIONS

Applications for positions as Occupational Therapy Aide and Pupil Aide will be received until August 31, 1925. Salary $1,680 and $1,000, respectively.

The United States Civil Service Commission announces the following open competitive examination:

Junior Medical Officer, Assistant Medical Officer, Associate Medical Officer, Medical Officer, Senior Medical Officer.

Applications for the positions listed above will be rated as received until December 30. The examinations are to fill vacancies in various branches of the Government Service.

For positions in the Departmental Service at Washington, D. C., the entrance salaries are: Junior medical officer, $1,860 a year; assistant medical officer, $2,400 a year; associate medical officer, $3,000 a year; medical officer, $3,800 a year; and senior medical officer, $5,200 a year. Advancement in pay may be made without change in assignment up to $2,400 a year for junior medical officer, $3,000 a year for assistant medical officer, $3,600 a year for associate medical officer, $5,000 a year for medical officer, and $6,000 a year for senior medical officer.

For positions in the field services appointments may be made at the salaries stated above or at higher or lower salaries, the entrance salary depending upon the qualifications of the appointee as shown in the examination and the duty to which assigned.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

The United States Civil Service Commission announces an open competitive ex-

amination for druggist to be held at any of the places at which city delivery mail service has been established in the States of Alabama, Florida, Georgia, Mississippi, South Carolina and Tennessee. Applications for this examination should be sent to the Commission at Washington, D. C., on or before September 2, 1925.

The examination is to fill a vacancy in the United States Penitentiary at Atlanta, Ga., at an entrance salary of $1,320 a year, and vacancies in positions requiring similar qualifications.

Applicants must have been graduated from a two-years' course in a recognized college of pharmacy; or, they must submit evidence that they are duly licensed pharmacists, such license having been obtained as a result of a written examination before one of the State boards of pharmacy, and have had five years of subsequent experience in the compounding of prescriptions. For the present vacancy it is desired to secure eligibles who have had experience in the administration of general anesthetics.

Competitors will be rated on spelling; pharmaceutical and chemical arithmetic; essay or report writing; chemistry, pharmacy, and materia medica; and education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C.

INFANT MORTALITY

The infant mortality (which is the number of deaths under one year of age per 1000 births—excluding still births), in 629 cities of over 10,000 population in the registration area, was 72.2 in 1924, as compared with a rate of 78.0 in 1923.

Oregon headed the list of states, with a rate of 51, and South Carolina stood at the foot, with a rate of 122.

PREVALENT DISEASES IN VENEZUELA

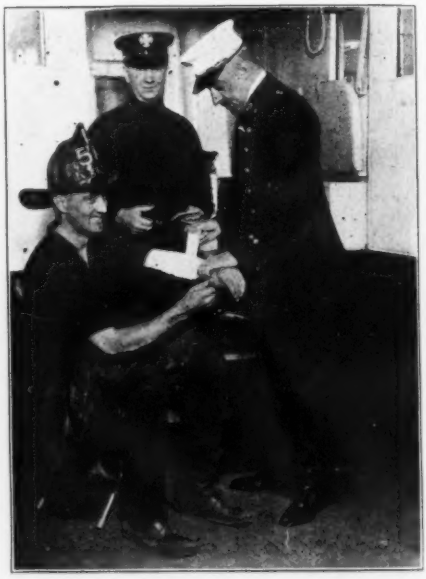
The most frequent causes of death in Venezuela during 1923 were: Malaria, 6,417; tuberculosis, pulmonary, 3,968; influenza, 3,019; pneumonia, 2,920; dysentery, 2,563; and infantile tetanus, 2,431.

MEDICAL RESERVE OFFICERS

The Commandant, Medical Field Service School, Carlisle Barracks, Pa., has advised that a copy of Army Medical Bulletin No. 12 has been furnished each Reserve Officer.

This is an excellent publication giving an "Epitomized Description of Medical Service in Campaign."

All Medical Department Reserve Officers are to be furnished, without charge, copies of bulletins issued from time to time by the school, and if your name is not on the mailing list, write to the Commandant, Medical Field Service School, Carlisle Barracks, Pa.



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"THREE ALARM" ARCHER

Dr. Harry N. Archer, chief surgeon of the fire department of the 5 boroughs of New York, may rightfully be called "three alarm". At any third alarm turned in, he is up and gone, his ambulance shooting like fire through the streets. He has been on the job for some time, always ready for first aid, or even surgical work, as he knows that N.Y. Fire Dept. men will stand instant operations, if necessary.

The photograph shows him bandaging Ray Walsh, John Delaney assisting, both of Engine Co. 56. The Fire ambulance is shown in the rear.

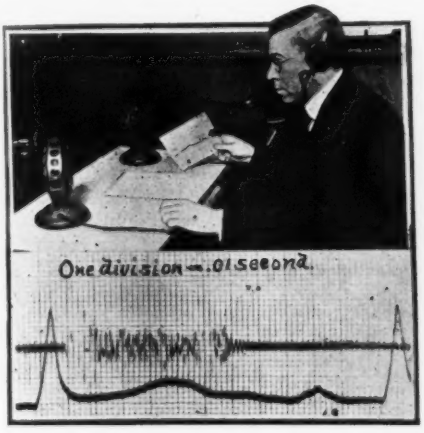
RODEO IN CHICAGO

Physicians who plan to spend their vacations in Chicago, attending clinics or such-

like (which really isn't the best sort of vacation), should come after August 15 and plan to see the big roundup and rodeo, where the most famous cowboys (and girls) will compete for national honors, during the nine days following the middle of the month.

DR. JOHN ADDISON FORDYCE

The death, on June 4, 1925, of Dr. John A. Fordyce, Professor of Dermatology and Syphilology at the College of Physicians and Surgeons of Columbia University, New York, has deprived the medical world of an active and able teacher, research worker and prolific and helpful contributor to medical literature in his chosen field of work.



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DIAGNOSING SICKNESS BY LONG-DISTANCE TELEPHONE

Dr. J. R. Greer, Chicago, received a New York patient's heart action by teleophotographic process and immediately radioed his diagnosis to the American Medical Association convention in Atlantic City. This is believed to be a most important step in medical work. The photograph shows Dr. Greer radioing his reply, "Leaky heart valve" with the teleophotographic chart below.

CITY LOCATION

A physician in Chicago, having an office in the "loop" and a practice of approximately $20,000 per year, has recently died and the location is still open. Very little financial outlay will be required. For particulars, write to J. Herman, D.D.S., 39 W. Adams St., Chicago.

VENEREAL DISEASE LAWS

Maine and Massachusetts have recently adopted laws and regulations looking to the better control of venereal cases and the prevention of the spread of these diseases in the various communities.

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MISS ADELAIDE NUTTING

Here is a study of Miss Adelaide Nutting, who retired July 1, after 18 years' service as Professor of Nursing, in Teachers College, Columbia University. Her original work, while at Johns Hopkins University, in asking that courses in nursing be started, led to her placement in Columbia. She is the only nurse in the world to be elected to a chair on any faculty.

MARRIAGE AND SOCIAL DISEASES

A recent report of the Vienna Marriage Consultation Bureau, a sub-department of

the municipal public health service, shows that 18.7 percent of persons applying to the Bureau for information and advice are infected with a venereal disease.

Seven of the United States require a medical certificate before marriage.

CHILDREN BORN OUT OF WEDLOCK

New York has pasesd a law to eliminate the word "illegitimate" from all school books and statutes and substitute therefor the expression, "children born out of wedlock".

MODERN LIBRARY CHANGES HANDS

What is regarded as one of the most important events in American book-publishing in many years has just taken place with the sale, for a sum reported to be in the neighborhood of a quarter of a million dollars, of the Modern Library, a popular series of modern classics, which has had an important influence in the American book-publishing field.

The principals in the sale are Boni & Liveright and Mr. Bennett A. Cerf, who for two years was a vice-president and one of the directors of that Company.

The new owners have incorporated as The Modern Library, Inc., at 71 W. 45th St., New York City, with Mr. Bennett A. Cerf, President, and Mr. Donals S. Klopfer, Vice-President.

FREE MEDICAL EXAMINATIONS FOR PHYSICIANS

The National Pathological Laboratories, of 5 S. Wabash Ave., Chicago, are doing a great service to the profession by offering to give a complete medical examination to any licensed physician, free of charge. This includes x-ray examinations, uranalysis, blood chemistry, basal metabolism and various other tests, and every physician who is able to do so should avail himself of this opportunity.

A FEW PLEASANT COMMENTS

"CLINICAL MEDICINE is O. K. and I enjoy of from cover to cover".—Dr. L. H. P., Fla.

"I think I enjoy CLINICAL MEDICINE more than any other medical publication that comes to me. The Surgical Seminar I find particularly valuable".—Dr. E. M. C. W., Pa.

"I wish to say that, as an old subscriber, I have always considered CLINICAL MEDICINE the best and most practical of all the journals. It suits the old practitioner like myself, giving plain and practical experiences for the common man. It suits me".—Dr. E. Y. W., Ga.

"Of all the medical publications that I receive and read, I get more out of CLINICAL MEDICINE than all the rest put together".—A Subscriber.

"My one thought would be that a very easy method to get hold of the latest in medicine would be to read CLINICAL MEDICINE, which is as good a postgraduate course as we know of."—A. S., N. J.

"Although I have only been a subscriber to CLINICAL MEDICINE for one year, I can truthfully say that I consider it the best of my six medical journals."—Dr. C. W. W., Utah.

"I find CLINICAL MEDICINE very good and is a very welcome visitor to my office every month."—H. R. N., Ont.

"Your journal is fine; full of meat from cover to cover. One article contained in one number, granting that I would receive no further information, has paid a hundredfold the cost of your journal, and given me peace of mind and positive assurance in handling the case successfully."—Dr. I. B. G., Pa.

Send for This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use the numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

T- 21 Surgical Operations, for the Surgeon and General Practitioner, by Dr. R. B. Waite. Antidolor Mfg. Co.

T- 27 Chlorine — Its Important Role in Therapeutics. 12-page booklet. Chlorine Products Co.

T- 30 Helping the Cell to Help Itself. 32-page booklet. The Alkalol Co.

T- 51 Treatment of Syphilis. 48-page booklet. Dermatological Research Laboratories.

T- 71 Goitre Special. 4-page folder. Columbus Pharmacal Co.

T- 83 Yatren-Casein in Non-Specific Protein Therapy. 4-page folder. Ernst Bischoff Co.

T- 91 The Golden Way. 8-page booklet. Century National Chemical Co.

T-107 The Iodine Age. 16-page booklet. Burnham Soluble Iodine Co.

T-149 Continental Scale Works. 24-page booklet. Continental Scale Works.

T-227 The Doctor's Factotum. Arlington Chemical Company.

T-237 Information for the Medical Profession about Bovinine. 36-page booklet. The Bovinine Company.

T-239 The Treatment of Sexual Impotence. 16-page booklet. Astor Chemical Corporation.

T-261 Causes and Effects of Pyorrhea. 32-page booklet. Dentinol and Pyorrhocide Co., Inc.

T-271 Pharmaceutical Preparations of Established Merit. 11-page booklet. E. Bilhuber, Inc.

T-305 Equipment and Surgical Instruments for Physicians. Bulletin No. 121. 64-page booklet. A. S. Aloe Company.

T-306 Letters-in-Evidence from Physicians. Philo Burt Mfg. Co.

T-311 The Cure of Cystitis, Pyelitis and other Inflammatory Conditions of the Urinary Tract. Chicago Pharmacal Co.

T-313 Glorified Petrolatum. 4-page folder. Dionol Company.

T-317 Endocrine and other Organotherapeutic Preparations. 32-page booklet. Armour & Co.

T-319 Seventh Edition 1924 Catalog. 239-page booklet. Geo. A. Breon & Co.

T-346 Campho-Phenique Ointment. 4-page folder. Campho-Phenique Co.

T-348 Simple Goiter. 4-page folder. Ciba Company.

T-393 The Betzco Line. 1925 catalogue. Frank S. Betz Company.

T-405 What Do You Know about Preventing Venereal Disease? 6-page folder. Andron Hygienic Co.

T-414 Habit-Time. 24-page booklet. Deshell Laboratories.

T-434 Safe Sedation. 12-page booklet. Deshell Laboratories.

T-462 Cod Liver Oil Therapy. 8-page booklet. Borcherdt Malt Extract Co.

T-463 Burdick Light Baths. Bull. No. 25. Burdick Cabinet Co.

T-471 Difco - Endocrines, Enzymes and Protein Compounds. 92-page booklet. Digestive Ferments Co.

T-485 Clinical Report and Micro-Photographs on the Effectiveness of Vita-Bac, by Robert Koch, M.D. Bergman Laboratories, Inc.

T-486 Spinal Curvature and Kindred Ailments. 36-page booklet. The Philo Burt Mfg. Co.

T-487 Patchwork, June, 1925. E. L. Patch Co.

T-488 Health from the Force that Rules the World. 12-page booklet. California Endocrine Foundation Labs.

T-489 Blood Pressure. Its Measurements, Interpretation and Management. 18-page booklet. Battle & Co.

T-490 Ultra-Violet and Incandescent Light Therapy, by W. D. Chesney, M.D. Bulletin No. 30. 24-page booklet. Burdick Cabinet Co.

T-491 The Treatment of Female Disorders by Means of Roentgentherapy Combined with Thelygan, by Manfred Fraenkel, M.D. (Berlin). 8-page booklet. Cavendish Chemical Corp.

T-492 Progressive Medicine, July, 1925. 16-page booklet. Drug Products Co.

T-493 Infantile Diarrhoea, by M. M. McCord, M.D. The Dry Milk Co.

T-494 Dry Milk in Infant Feeding, by Earl V. Wiedman, B.Sc., M.D., Lincoln, Neb. The Dry Milk Co.

T-495 Fischer's Magazine, July, 1925. 32-page booklet. H. G. Fischer & Co.

T-496 Surgical Diathermy "Benign Polypi of the Rectum, by Gustav Kolischer, M.D. H. G. Fischer & Co.

T-497 High Frequency Currents and Roentgenotherapy in Vesical Tumors. Gustav Kolischer, M.D. and Harry Katz, M.D., Chicago. H. G. Fischer & Co., Chicago.

T-498 Microscopes. Eimer & Amend.

T-499 Pastor Stop Watch. Bulletin No. 352. Eimer & Amend.

T-501 Ultraviolet Radiation in Oral Lesions, by Frederick W. Lake, M.D., Boston, Mass. Hanovia Chemical & Mfg. Co.

T-502 Quartz Light in the Treatment of Pyorrhea by Isaac L. Folstein, D.D. S., New York. 8-page booklet. Hanovia Chemical & Mfg. Co.

T-503 Chronic Ulcers, Calcium Imbalance and Parathyroid Therapy, by Henry R. Harrower, M.D. 12-page booklet. The Harrower Laboratory.

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T-512 Intravenous Medication with Iron and Arsenic, by A. H. Werner, M.D., New York City. New York Intravenous Laboratory.

T-513 Loeser's Intravenous Solution of Iron and Arsenic. New York Intravenous Laboratory.

T-514 Iron in Various Food Materials. Postum Cereal Co., Inc.

T-515 Phosphorus in Various Food Materials. Postum Cereal Co., Inc.

T-516 Atophan-Salicylic Compound. 16-page booklet. Schering & Glatz, Inc.

T-517 "Junior" Thermo - Therapy Lamp. Victor X-Ray Corp.

T-518 Victor - Allen Head - Rest. Victor Electric Corp.

T-519 Victor Stabilized Mobile X - Ray Unit. 8-page booklet. Victor X-Ray Corp.